

**HOT TIPS: HOME STUDIO AUTOMATION**

**20<sup>TH</sup>**  
ANNIVERSARY

# KEYBOARD

**MAKING MUSIC WITH TECHNOLOGY**

JUNE 1995

the orb

**HOW AMBIENT  
TECHNO'S  
MASTERMIND  
WORKS HIS  
MAGIC**

**WIN**

**A \$38,000  
HOME STUDIO!**



**Reviewed**

**CLAVIA NORD LEAD**

**OPCODE OVERTURE**

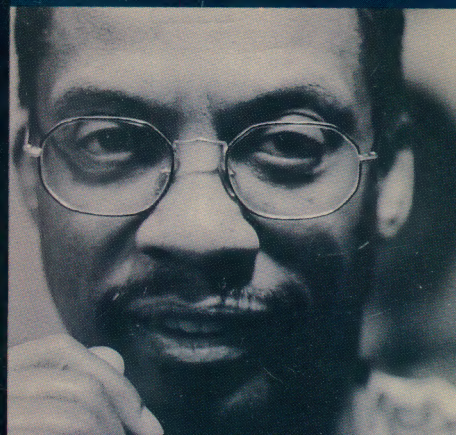
**YAMAHA QY300**

**ENSONIQ KT-88**

**SAMPLING CD-ROMs**

**herbie  
hancock**

**ON INTERACTIVE MEDIA  
ACOUSTIC PIANO  
COMPOSING  
MILES DAVIS  
& MORE**



A MILLER FREEMAN PUBLICATION







# Buy the synth.



# Get the software, too!

Make your best deal on a Korg X5 and you'll also receive \$950 worth of brand new Mark of the Unicorn software and extra Korg sounds!

The X5 is a compact, 61-note synthesizer with Korg's award-winning sound quality and power. And with all the goodies we're throwing in, you can fire up your Mac or PC and turn a truly affordable keyboard into a full-blown studio-quality workstation—complete with a monster sequencer,

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Or play it straight and take your X5 on the road. At about ten pounds, it's the perfect gig 'board.

Check out the new X5 Synthesizer at your authorized Korg dealer. But do it today, because an offer this good won't last forever.

**KORG®**  
The power company.™



# Any keyboard can generate sounds. This one generates ideas.



Exactly where do ideas come from anyway? Well if anyone knows, it's Daryl Hall – whose ideas are often listed by name on the hit charts.

And inside his studio, you'll find the Korg i3 Interactive Music Workstation.™

Here's a keyboard that can literally get you thinking. Beyond its legendary Korg sounds and full sequencing power, the i3 can accompany you

in all kinds of musical styles, leading you to places where your imagination can easily ignite.

"The more inspiration I get out of an instrument, the better," says Daryl. Indeed, says Korg. So we built a keyboard that does more than just sound great. It's absolutely thought-provoking.

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the orb

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With his latest album, *Dis Is Da Drum*, Hancock again changes the face of music while keeping timeless values alive. The "chameleon" of keyboard performance discusses the power and danger of technology, the spirit of Miles, and the importance of being challenged in this free-wheeling encounter.

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DOMINIC MILANO

Every self-respecting keyboardist, electronic music junkie, and full-blooded gearhead lives for More Better Bigger Faster. Whether this is simply a by-product of the Great American Dream (you know, a chicken in every pot, two VL1s in every garage), the treachery of the disposable society of electronic keyboardists, or simply a law of nature, I couldn't say. But I know most of us chase the techno monkey with ferocious abandon.

To the uninitiated and anyone else in close proximity, our addictions to bells and whistles can be unsettling. I mean, what does your significant other have to say about pouring endless amounts of cash into a silicon-lined black hole? But to us, this stuff's our life's blood. We've got to stay ahead of the curve, and if that means adopting a take-no-prisoners approach to getting our hands on new gear by mortgaging our homes, our first-born, and our souls, so be it.

And therein lies the Dilemma of the Day. In our mad dash to collect all the latest gewgaws, to be the boys and girls with the most toys, we've whipped the manufacturing community into a Feature Frenzy. That is, every new-fangled Thingamabob is laden with gizmos and wizmets, no matter how useful or useless. And each new release of the Thingamabob is crammed with even more gizmos and wizmets. Some of them are of the so-compelling-you-can't-wait-to-get-your-hands-on-them variety, but many more seem put there to please no one but product reviewers whose job it is to find things that products won't do.

Gads. Did I really say that? I must have, because even now, I can hear the angry horde of Keyboard Chain Gangsters gathering outside my door. Before my limbs are torn from my poor torso for speaking such blasphemy, perhaps I should elaborate. Product reviews are written for a wide variety of potential readers who may also be consumers of the particular piece of gear being dissected. So it's our job to try to take into account the needs of everyone, from the most savvy professional to the most uninitiated beginner and everyone in between. That's no easy task. But it inevitably leads to statements of fact that can be read as outright criticism by

## Dilemma of the Day

hypersensitive manufacturers.

One nefarious case in point: A while ago, senior associate editor Jim Aikin wrote a review of an instrument that didn't feature alternate tuning capabilities. Jim's review included a single sentence that pointed this out. No attitude included. A mere statement of fact, put there for the minority of readers who give a hoot about such things.

When the next rev of that instrument landed in our offices, it included alternate tunings. The function wasn't implemented as well as many other machines implement it, and Jim's subsequent review pointed that out too, with the caveat that few people seem to care about these features. Of course, the manufacturer's response was an exasperated, "We put that feature on because Jim complained it wasn't there to begin with, and now he's complaining about its being there!" But we hadn't been complaining, only explaining.

Like I said, an example of Feature Frenzy at work. There are more examples in virtually every piece of hardware and software on the market — and no, reviewers aren't the only culprits in this trend. You consumer types have to take some heat too. (Take Korg's Wavestation as an example. When it first came out, consumer response wasn't, "Wow, a new synthesis engine that'll make outrageous new timbres!" It was, "Where's the piano patch?")

Okay, so some of this Feature Frenzy results in useful stuff. But a lot of it results in cluttered, overly complex, difficult to grok tools with learning curves from hell.

And it's a vicious cycle that's nigh impossible to break free from. If software program A includes 110 features, then program B darn well better have 111, regardless of whether a vast majority of players are using any more than 65 of them or whether those 111 features are accessible and easy to understand. Which means it's often difficult if not impossible for a manufacturer to bring an easy-to-use, but nonetheless robust program to market, simply because it's difficult to tailor a marketing story around anything other than endless lists of gizmos and wizmets.

So what's my point? When you're considering any musical tool, be it hardware or software, by all means read as many reviews as you can on said tool, but then step back and ask yourself (1) if that tool is powerful enough to handle the job you want it to handle and (2) whether that tool is understandable enough that you're not going to be locked away with manuals for months before you can get busy making music with it. Unless of course you just love wrestling with manuals.

Enjoy. ■

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Made In U.S.A.



# If our new synthesizer didn't sound so good we'd sell it as a mixer.



Introducing the Yamaha W5/W7. A synthesizer has never—ever—given you this much control of sound. Or been this easy to use. Let's get into it.

The W5/W7 starts you off with superior sound. Proprietary Yamaha technology produces exceptionally clean and realistic voices. 384 of them, to be precise.

That includes 8 MB of pre-set, internal and General MIDI voices designed specifically for professional use. And for the first time, the W5/W7 lets you work with all of these voices simultaneously.



*The same 32-note polyphony, 16-part multi-timbre synthesizer is available as the 76-key W5 (\$2,495 MSRP) and the 61-key W7 (\$1,995 MSRP).*

## No More Compromising On Your Vision.

Working on the W5/W7 is like working in a fully-equipped professional studio. Yamaha has loaded this synth with six premium quality effects processors and a powerful, full-function mixer. Here's what they do...

Use the mixer to balance and pan all 16 tracks and put your own personal spin on the voices. You get three independent, fully programmable system effects, each with their own send per track. In addition, the W5/W7 mixer gives you three insertion effects. So, for instance, you get your distortion and wah-rich guitar sound, your rotary speaker organ sound and your carefully EQ-ed drum sound. No more compromises. And no more wimpy voices in your final mix.

In short, the W5/W7 lets you make the music you can't quite get with any other synthesizer.

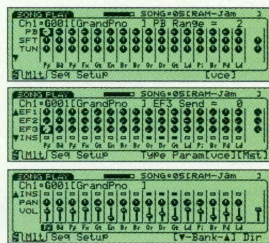
The W5/W7 16-track, 16-song sequencer is just as powerful as the mixer. A 416 KB sequencer memory stores over 100,000 notes with all the control—pitch bend, modulation, etc.—to make them work.

At any point during sequence playback you can drop into voice edit mode and make and store changes without missing a beat.

Additional sequencer functions including full event editing, instant auto-locate points, track solo and mute, and automated punch-in/punch-out recording make this synthesizer as versatile as a recording studio.

The icing on the cake is the new W5/W7 Song Voice function. If you've ever created a sequence and replayed it with the

wrong voices, you'll appreciate this. Song Voice bundles voices with their sequence. So you always get the sound you want and never get surprised.



*The W5/W7 features an advanced digital mixer and 6 simultaneous digital effects processors.*

## An Operating System That Actually Simplifies Your Work.

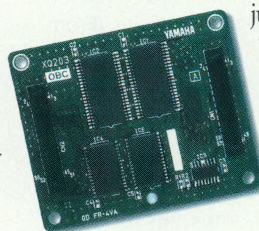
If the W5/W7 sounds incredibly powerful and exciting, it is. And surprisingly

enough, the operating system actually makes it easy to access the power.

The beauty of the new OS is that it's skin deep. You are almost always within two key presses of any feature or voice. That means that voices are easier to find than ever before. And effects are easier to apply. At last, a synthesizer that helps you make music instead of getting in the way of it.

Programming is just as easy. 171 ready-to-use, intuitive templates help you apply amplitude envelopes, filters, pitch envelopes and LFOs. Programming has never been easier or quicker.

*The W5/W7 is expandable. "Concert Grand", "Vintage Sounds" and "Rhythm Section" wave cards each add 4 MB of exceptional voices.*



Of course, you can still program it all by yourself if you want to. And you can even take control of the voices to extremes with W5/W7 Editor/Librarian software for Macintosh and Windows.

So there it is. The W5/W7 synthesizer from Yamaha. It's exceptional sound and control give you the power to make the music you've always wanted.

# YAMAHA®





## Amplifier Roundup

I was overjoyed with your cover story on amplifiers [Apr. '95]. I've been running my keyboards through a guitar amp because (1) I didn't know there was such a thing as a keyboard amp, and (2) when I learned that such a thing existed, I couldn't find any worth buying. Thank you for enlightening me.

Crazyboy Cohoon  
via Internet

## New Directions

In response to your questions concerning the use of prerecorded MIDI files at gigs [From The Editor, Apr. '95], I rely on them completely. As a guitarist, when I discovered prerecorded MIDI files I realized that I could play guitar and sing along with them at gigs. Yes, I would like to read reviews of MIDI files of popular tunes. I have solicited more than a dozen sequencing companies for audio demo tapes and song lists, and I've found extreme differences in quality and musicianship between them. Some companies provide full documentation along with the SMF, such as MIDI channel and instrument assignment or lyric sheets with guitar chords. These are very useful in helping me to learn the sequence quickly. Some companies send a 3.5" disk: You set up instruments, velocity, octave transposition, and practically everything else, and you have to visit the local record store in hopes of finding lyrics in a songbook.

You never really know what you are buying when you order SMF until you plug the disk in. Reviews of these prerecorded MIDI files would give us insights that we could definitely use.

Walter G. Thorne, Jr.  
No address given

I play organ and keyboards for the Rainbow Gospel Ensemble in central and southern New Jersey and eastern Pennsylvania. We use prerecorded sequences whenever we can. If a group member should be absent, we can still pump a lot of sound without missing any parts. We can play on top of the sequenced material to thicken our sound. If an instrumentalist is having an off day, that person can do the equivalent of lip-syncing. To the extent that our vocalists can accept the discipline of singing to the music, they can benefit from the consistency that attends the use of sequencing. So I certainly would be interested in reading reviews of MIDI files. Indeed, your product reviews are the most valuable feature of the magazine.

Bennett E. Bozarth  
Marlton, NJ

## Soft & Hard (Core) Ware

As a longtime subscriber, I must register a strong complaint about the deteriorating standards of *Keyboard*'s advertising content. In the Apr. '95 issue, both Sydney Urshan Music's ad for Key Disk Terminator and the Symetrix Dyna-Squeeze "Wonder Bra" ad are juvenile and insulting, to say the least. I had to look twice at the cover date to confirm that this is indeed 1995, not 1955. When are we, as a society, going to stop objectifying the sexuality of women for the purpose of selling things to men? Who is going to lead the way in setting higher standards? If *Keyboard* were to instruct these firms to follow more altruistic guidelines, you wouldn't lose their business. Where else would they go? Does *Keyboard* really intend to signal that the respect of its female audience is of little consequence?

And on the inside back cover of the past several issues we are treated to appalling racial stereotypes, courtesy of Kurzweil. Let

me get this straight: The white musicians are in the orchestra for the orchestral sounds, and the black musicians are on the street for the contemporary sounds, right? The inherent implications perpetuate harmful misconceptions and foster further misunderstanding and prejudice in the musical/human community. Is that the sort of message that Kurzweil and, by association, *Keyboard*, want to send?

Finally, an ad from InVision in the Mar. '95 issue features a caricature of a black kid holding a Molotov cocktail. Angered by this blatant racism, I called InVision to protest. A self-described "vice-president of sales" — he refused to give me his name — told me to "grow up" and hung up on me. That's at least one less set of the Miroslav Vitous Library that InVision can expect to sell.

Institutional racism and sexism are so enmeshed in our societal fabric that all too often we don't even recognize it staring back at us in the mirror. Just because no offense is intended doesn't mean that none is taken. *Keyboard*, wake up and smell the '90s!

Fred Simon  
Los Angeles  
via CompuServe

I must object to the recent Symetrix ads that have run in *Keyboard*. Sure, sex sells, but I wonder how your male readers would react to a full-page shot of some guy's balls maximized by a pair of compression shorts. You could not give me a Symetrix product. I won't be renewing my *Keyboard* subscription.

Laura Jaurequi  
Irving, TX

The Symetrix advertisement is tacky and offensive. Now, don't get me wrong. I love a fine, lacy bra, but "gently squeeze and push up"? Give me a break. It's "lift and separate." Whoever wrote this ad never wore a brassiere.

I could let slide the fact that *Keyboard* has become primarily a resource for tech heads. But this ad convinces me that it's intended for all the ----heads in the keyboard world as well.

Sharon Shaheen  
Santa Fe, NM

## Keyboard on the Internet

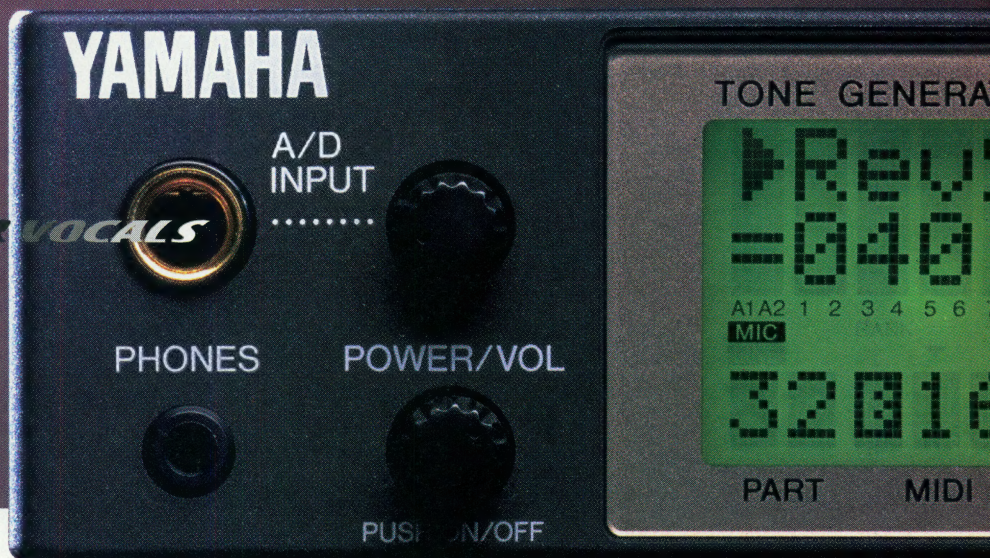
**Keyboard System-Exclusive, our Internet Web site, is at <http://www.mfi.com/keyboard>. If you're on AOL or CompuServe, or don't have WWW access, you can anonymously FTP <ftp://ftp.mfi.com/pub/keyboard/patches> directory.**

Symetrix and Sydney Urshan Music have climbed on an embarrassing bandwagon of mediocrity. Please reprint Richard Schmidle's fabulous letter on this subject [Apr. '95] every time you contemplate running such cheezy



# We want your input.

TRUMPET ACOUSTIC GUITAR VOCALS  
SAXOPHONE DRUMS  
FLUTE  
ELECTRIC GUITAR DRUMS



Presenting the MU80, a small box that introduces some big innovations. Including one of the largest collections of digital voices ever gathered in a half rack space. The most advanced signal processing ever found in an \$895 tone generator. And something altogether new to tone generators...your voice.

Before we get to that though, you'll want to know about its specs. The MU80 boasts true 64 note polyphony. No gimmicks. True 64 note polyphony.

The MU80 also lets you play 32 instruments simultaneously. (It accepts two MIDI inputs.)

And you have lots to choose from. The MU80 includes 729 voices and 21 drum kits, including 128 General MIDI voices.

### The Most Important Voice of All—Yours

The MU80 uses superior quality Yamaha AWM2 voices. But the most important voice in this tone generator is yours. The MU80 features an analog input right on the front panel. It accepts two mics, two line level sources (or a mixture of both) or one stereo source. So you can plug your vocal and acoustic guitar—for instance—right into the MU80 and control them as easily and completely as if they were MIDI voices.

You could never do this with a tone generator before.

Now that you've got your vocals and

your acoustic instrument sounds in the machine, you can shape and control them with the most powerful combination of signal processing available in a tone generator. The MU80 has a total of four simultaneous digital effects processors that you can apply to your choice of tracks—including your vocals and acoustic instrument—and to the overall mix. You do this using the MU80's sophisticated yet simple 34-channel mixer. Effects such

as reverb, chorus, flange and pitch change will help you create an incomparable composition.

You can also tailor the sound with the MU80's 5-band digital EQ. Use the pre-programmed Jazz, Pop, Rock and Classic EQ templates to get yourself started. Or, build up your own custom settings from scratch.

In performance mode, the MU80 allows you to layer up to four voices (in addition to your own) with effects. And, considering that many internal voices are already two-elements deep, you can have up to eight layers simultaneously.

### Performing & Recording

Now you've got a powerful tone generator. What are you going to do with it?

If you perform solo, all you need to achieve professional-quality sound is the

MU80, a microphone, an acoustic instrument and a sequencer. All in one you have your effects processor, mixer, EQ and backup band.

Or, if you record, you will have already realized that you can mix 34 tracks including vocals, guitar and MIDI right down to stereo. Or even mono.

If you compose with a computer sequencer, you will appreciate the MU80's built-in dual MIDI interface. So you can plug it right into your computer without an external MIDI box or an internal board.

So, in a nutshell, the MU80 is about bringing you all the power and versatility you need to create original music. With your own vision. And your own voice.

### Portable General MIDI

When you're on the road, or when you're working on multi-media projects, you may also want to use the MU80's mighty little cousin, the Yamaha MU5.

At just \$299 suggested retail, this 28-note polyphony, 16 part multitimbral product is the most affordable battery

powered GM tone generator in the world. With its own MIDI interface, this

portable unit can plug it directly into a computer or keyboard to give you the most out of General MIDI for a minimum price.



# YAMAHA®



ads, else may thy editorial conscience (and readership) smite thee in the watoosie.

Christie Turner  
Dallas, TX

What is wrong with sexual references in ads? The Symetrix ad uses a valid analogy to make its point about the technology being implemented. Surely only a monastic or malevolent mind would object to the sight of a bra on a woman. So enough righteous non sequiturs already, Mr. Schmidle. Base your protests on rational, objective principles, not sexual insecurity.

Taj Sidhu  
Animation Sound  
New York, NY

I figured the Sydney Urshan Music ad was for porn CDs until I saw the Mac OS logo. This sort of ad sends the wrong message to younger readers who weren't expecting a *Playboy*-like shot when they bought your magazine. The message it sends to me is that this product cannot stand on its own merits and that sleaze is the only way it can be promoted.

R. R. Cook-Robinson  
via AOL

The Sydney Urshan Music ad on page 122 of your Apr. '95 issue plumbed new depths

of degradation. Using a woman in a lace teddy to sell software is an insult to all defenders of good taste and womanhood. I carefully read the ad several times to make sure that I had not missed one word of this outrage. I examined the photo with a magnifying lens to see more clearly the extent of the depravity. I want you to know that I would never buy this product, unless I needed it.

Mark Stivers  
Sacramento, CA  
via Internet

What's next? Gatefolds of the Komely Keyboard Krotch of the Month?

Dana Brent Woodaman  
via AOL

*[While Keyboard reserves the right to refuse ads that are untrue or blatantly offensive, as a practical matter we're not in the business of telling advertisers what sort of imagery is appropriate to depict their products. We prefer to let our readers formulate and express their own views on these and similar subjects. Presumably, advertisers choose provocative images with an understanding that they may attract some negative reaction and adverse comment. Because Fred Simon accused InVision not only of insensitive advertising imagery but of hanging up on him, we contacted them for a response. According to Candice*

Denton, Marketing Coordinator, "We will promptly pass on Mr. Simon's concerns to the young African-American artist whose cartoon was used in our ad. After identifying himself, Denny Mayer of InVision listened to Mr. Simon's interpretation of our ad. It was quite obvious that Mr. Simon expected us to agree with him and forthwith to change our ad. We declined, and the call was ended."]

## Now About the Actual Ad Copy . . .

If Sydney Urshan Music's margarine-faced girlfriend wants to try out for the Fredericks' catalog in your pages, that's peachy with me. What infuriates me more is that Urshan has created a tool for software pirates, pure and simple. "Regain your right to make backups"? Mark of the Unicorn has provided me, a licensed user, with all the backup copies of Performer I could ever want. "No more downtime due to lost authorizations"? If you lose an authorization, your hard disk went down; getting the sequencer back on line is the least of your worries. Besides, as a licensed user, you do have another sequencer on your backup disk, don't you? "No more system conflicts?" Huh?!? "No more deinstalling or deauthorizing before optimizing drives"? That problem went away years ago. And the most outrageous: "Applications run smoother"? Urshan must think I'm really stupid if I'll believe that one.

KEYBOARD PRESENTS

**The Magazine for Desktop Musicians**

# Music & Computers™

## Make better music with your computer!

From basics to power-user tips, *Music & Computers* has it covered. Developed by the team at Keyboard, this new magazine is packed with applications, useful overviews, and the straightforward explanations that have made Keyboard the #1 choice for music technology information.

## Summer issue features:

- PC Soundcard Spectacular — Insider tips! Essential features! Horror Stories! Add great sound to your computer with minimal hassle.
- What to Check when your soundcard doesn't work.
- Sound Blaster Secrets — Discover the hidden Hendrix mode.
- Notation Software Guide — Print out your music! Dozens of programs profiled.
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- SuperJAM! Turbo Tips — How to use this popular auto-accompaniment program as a composition partner, an interactive drum machine, and more.

**Learn to make better music with the partner that's already on your desktop!**

**Music & Computers shows you how.**



**On Sale May 30!**



This product exists so pirates can steal the software I pay to use. Every time you run this ad, you insult every one of us. If I were MOTU or Opcode, I'd pull my ads. As it is, *Keyboard* has certainly lost a good deal of its credibility. I thought you guys were looking out for my best interests, but every month you run that ad you make it clear that I'm wrong.

Jim Bordner  
Gimme That! Music  
via CompuServe

[Sydney Urshan replies: "Key Disk Terminator is not a tool for software pirates. Each copy of KDT has an individual serial number. When backup copies are made, the KDT init and DA that made the copy must be loaded up in the computer for the copies to work. Although KDT users would prefer not to have this limitation, it was implemented to protect the software companies from piracy.

"The U.S. Copyright Act, Section 117, states in part: '... it is not an infringement for the owners of a copy of a computer program to make or authorize the making of another copy or adaptation of that computer program. ...' Companies that manufacture copy-protected disks, such as Mark of the Unicorn, Opcode, Digidesign, and many others, outright deny users their legal rights, 'pure and simple,' by preventing them from making backup copies.

"Mr. Bordner's view on getting 'all the backup copies of Performer [he] could ever want' is just not shared by the thousands of KDT users. Even MOTU will tell you (as one of their technical support staff has told me) that their number one complaint is users losing installs and being temporarily without their copy of Performer. I have had hundreds of e-mail messages sent to me from around the world with such complaints.

"Mr. Bordner states that 'getting the sequencer back on line is the least of your worries,' but tell that to the professional musician whose livelihood depends on the reliability of their sequencer. Having only one install left on your backup disk in the event of a failure (which can happen even without a hard disk crash) is just not a position that professionals want to put themselves in, especially if they are on the road. Also, you could be permanently without an install should one of the software companies go out of business.

"When it comes to 'applications running smoother,' KDT allows the user to isolate each key in a separate 'barrier.' Many keys conflict with other programs as well as each other. For example, some versions of the Hyperprism and Pro Tools keys conflict with each other. Further, many sales we currently make are to users who are losing their installs due to optimizing their drives, a problem that Mr. Bordner claims 'went away years ago.'"

## Tropical Tempest

While searching his memory banks for an "exciting tropical style" to use for a jingle, Richard Leiter reflects that "salsa was great but [it] sounded either Cuban or Mexican" [Composing, Apr. '95]. First of all, salsa is not a Cuban rhythm; it's the foundation of Cuban music itself: El Son, which has been taken from our country by non-Cuban musicians to show themselves as "inventors of the wheel." Tito Puente, Willy Colon, and Ruben Blades are highly honest when they call this "style" by its proper name: Cuban music. Finally, there is no way in the whole solar system that "salsa" (Cuban music) sounds Mexican, even if you're eating a burrito and wearing a big hat while playing it.

R. J. Marino  
Latino Sequences  
via CompuServe

## Creative Options

In your March '95 issue, Connor Freff Cochran discusses the importance of fatherhood. The Apr. '95 installment points out that most of us forget or choose to ignore how wondrous life is. Topics such as these in Cochran's essays expose issues that are bringing American society to a grinding halt. I applaud whoever is making the decision to expose *Keyboard*

Continued on page 127 ►

# Multi-Port MIDI Support



professional MIDI interface for all IBM compatibles

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# What went through our minds when we designed the XP-50 Music Workstation?

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A 61-note velocity and aftertouch-sensitive keyboard and newly-designed modulation lever help you add feeling to every performance. A large 40-character, 2 line backlit LCD makes visibility and data editing more efficient.

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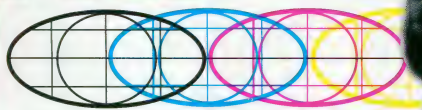
Loop, pattern and linear recording let you be creative without interrupting your thought and musical processes. Pattern Paste and the ability to create 100 customized patterns provide even more options.











ASSEMBLED BY ROBERT L. DOERSCHUK



Once merchants of musical doom, the Wolfgang Press have been celebrating the joys of dance music over the past few years. Their 1991 album *Queer* was spiced with samples and infectious, machine-driven grooves. Its feel was remarkably light for a band that once embodied the introspective, gothic sound propagated by their label, 4AD. Their most recent offering, *Funky Little Demons*, ventures even further into dance territory. The single "Going South" is as funky as they come, and the track "11 Years"

Even so, the band's move to groove hasn't just been, well, fun. "We ran into legal problems with Lou Reed and Kraftwerk after *Queer* came out," Gray recalls. "Reed wanted something like 95 percent of the publishing for the song 'Birmingham,' in which we'd used bits from his 'I'm Your Man' and 'I'll Be Your Mirror.' People have become very paranoid and money-grabbing about samples. It's a shame because sampling can add real color and make a song go somewhere else."

How did this affect the band? With a grin,

Gray answers, "We've become more careful."

The Casio FZ1 was the main sampler on *Little Demons* and the

sequencing to work the stuff ourselves."

They must have been quick studies, since Gray, normally a guitarist, reckons that he ended up playing more keyboard parts than Cox, even though he considers himself "a Neanderthaler" at the keys. With the other bandmembers booting up Cubase, Gray made do with an old Alesis MMT-8 and the QY10. "What I love about the MMT-8 is that it's laborious to edit too much detail in it, so you're more prone to say, 'It sounds okay, so let's leave it as it is.' What matters is ideas, not skill or perfection."

For years the Wolfgang Press performed as a trio, initially with an E-mu Drumulator, later with a TEAC 4-track reel-to-reel, and still later with a stereo DAT for backing tracks. They've expanded to six pieces for their current U.S. tour, with a keyboardist, a second keyboardist/guitarist, a bassist, and a drummer. (Cox left the band after finishing *Funky Little Demons* because, according to Gray, he didn't like working under the kind of pressure the sessions required.) There's still plenty of sequenced rhythm in the live show too, with samples stored in an Akai S3200.

"The problem with previous tours was that we had two FZ1s that didn't have enough memory," Gray explains. "The 3200 is more versatile, and we like the idea of working with one mother unit. After all, you don't want to have too many keyboards around."

—Paul Tingey

## The Wolfgang Press

FROM DOOM TO DANCE WITH  
*FUNKY LITTLE DEMONS*



features a brass riff worthy of the Memphis Horns. A recent collaboration with hip, 50-something Tom Jones, who had covered their song "A Girl Like You," testifies further to the fact that the Wolves have decided making music can be, well, fun.

"*Funky Little Demons* is our attempt at trying to write three-minute classics," explains Andrew Gray. "It's good to have that kind of focus, otherwise you can end up making an album that doesn't say anything. That's what happened with our earliest albums, but *Queer* was more focused and *Funky Little Demons* is our most focused album to date."

band's sampler of choice for several years. There weren't that many other 'boards on the album: A Korg M1, a Roland Juno-1, and a Yamaha DX21 were the mainstays. Mark Cox occasionally brought in his ARP Odyssey and Axse. A VCS3 was used on one track. And on "She's So Soft" a Roland D-50 cropped up, with a Yamaha QY10 used for Clavinet-type sounds.

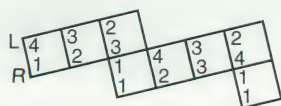
"After becoming familiar with [Steinberg] Cubase during *Queer*, we had enough equipment for each of us to work at home. We wrote separately to save time, so Mick [Allen, singer] and I had to learn enough about keyboards and





# New Heights To Scale

Fingering has never been fun. Plenty of players learn to wail on the white keys but never go on to experience the joys of soloing in, say, *D♭*. Traditionally, there have been three ways out of this dilemma: (1) practice, (2) transpose buttons, and (3) alternate keyboards. The first is a pain, and the second in short supply on pianos and their non-electronic cousins. But there's a new entry in category three: the Uniscala keyboard, devised by Antonio Celso, a formerly frustrated but inventive piano student. Rather than hack away at the 12 major scales he would have to master on the traditional keyboard, Celso invented a new arrangement (right), on which all major scales can be played with a single fingering:



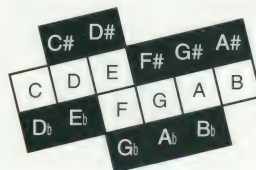
The Uniscala system also boils the 36 minor scale fingerings down to three, including this, for the harmonic minor:



Chromatic scales? They're simpler still, and identical on left and right hands:



Unlike the traditional keyboard, Celso's design assigns two or even three keys to some notes. With reference to a C scale, for example, enharmonically equivalent sharps and flats are positioned across from one another:



Celso has already built Uniscala configurations for piano, organ, and accordion. If you're interested in learning more about it, write to him at Rua Maracá, 70, V. Assunção, CEP 91.900-640, Porto Alegre, RS Brasil. —Robert L. Doerschuk



## Internet Surfer

WHAT A TANGLED WEB WE WEAVE

Well, Netheads, the World Wide Web is growing faster than little Johnny's shoe size. What's next? Some say credit card encryption for ordering on-line materials. Others say keep the Internet in complete anarchy (i.e., free, not commercialized). Any way you slice it, there are great resources on the Net. SLIP and PPP monthly accounts are getting cheaper, so why not join the WWW generation — it could be well worth the effort and cost. If not, you can still access the WWW through many dial-up services. Here are some lip-smacking home pages to wet your whistle.

For music entertainment, the Ultimate Band List (<http://american.recordings.com/wwwofmusic/ubl.html>) is packed with links to hundreds of artists' newsgroups, FAQs, mailing lists, digitized songs, and lyrics. Check out Geffen (<http://geffen.com/>) for plenty of image and sound files of DGC artists as well as the Internet Music Store from CDnow! for on-line ordering. At Miramar (<http://seattle.uspan.com/miramar/>) you'll find video and audio snips of Jan Hammer, Tangerine Dream, and Thomas Dolby's *The Gate to the Mind's Eye*. At Frog Peak Music (<http://smallmedia.com/bin/fgp.cgi>) look for information on contemporary artists' books, compact discs, cassettes, LPs, scores, and periodicals.

For you computer music gurus, go to CCRMA (<http://ccrma-www.stanford.edu/Welcome.html>) for upcoming events, workshops, and access to their anonymous



## World View News

### CAREER UPDATE

**ONSTAGE.** Bon Jovi is on yet another world tour, with David Bryan again rocking the house on keys. They opened in late April with a concert in Bombay, followed by dates throughout the Pacific Rim and Europe. American dates follow in mid-July through September. Not bad, considering their new album won't even be out until June. . . . *I Was Looking at the Ceiling and Then I Saw the Sky*, an opera in two acts by cutting-

edge composer John Adams, premieres on July 11 at New York's Lincoln Center, with libretto by poet June Jordan and staging by Peter Sellars. . . . Morris Pleasure has replaced Freddie Ravel as music director and main keyboardist on the current Earth, Wind & Fire international tour. U.S. dates begin in June. . . . Viva, the German equivalent of MTV, will film *Ambient am Ring*, an open-air concert of contemporary electronic music, this summer at the Nürburgring racetrack. Headliners include Sven Vath,

Marusha, and Cosmic Babies. . . . The Prodigy, winners of MTV Europe's video award for Best Dance Act, is taking its show on the American road throughout May. . . . Journey survivor Jonathan Cain delivered a rare intimate solo set last March at the Troubadour in L.A. as part of the club's Acoustic Underground series. . . . Plans are being made for a Gary Wright tour in support of his new album, *First Signs of Life*. A serious devotee of Brazilian music and culture, Wright recently remarried his wife in a ceremony led by a rainforest

Indian. . . . R&B session veteran Kashif is deep into his next solo album, which is the first release scheduled for his own label. Brooklyn Boy. Look for it in the spring of '96, along with his three-part television series, *How to Make Money Making Music*, most likely on MTV or BET. . . . Bobby Douglas, mainstay keyboardist with the Apollo Theatre's house band, took a brief sabbatical recently to back Freddie Jackson on a Japanese tour. . . . The gaps between jazz and classical piano were bridged on Apr. 13, when





## POLICE BLOTTER



When the celebrated Finnish folk ensemble Värttinä rolled into San Francisco last March for a show at the Great American Music Hall, they had a most unpleasant welcome: Band member Riitta Potinoja's accordion was stolen. Be on the lookout for a Timangi (Lasse Pihlajamaa Special) five-row button accordion, black with gold decorations, microphones, and a black case (red inside). Please call *Keyboard* if you have any information that could help police recover Riitta's instrument.

## Starr Parodi & Jeff Fair

### LIFE AFTER ARSENIO

**S**ince *The Arsenio Hall Show* went off the air in May 1994, members of Arsenio's house band, the Posse, had to scurry around trying to find steady work. Posse co-keyboardist Starr Parodi didn't waste much time latching onto a new venue. She and husband Jeff Fair jumped right into the movies — although you won't often see their names in the credits. That's because they've been busy scoring movie trailers, the "coming attractions" that you see at the theaters and in TV ads. "We're composing original music for a lot of advertising trailers for MGM and United Artists," Starr says. "The producers want to pack all the best scenes from the movie within a two-minute period. They're trying to portray the best parts of the movie and trying to get people to come see it. We just did *The Pebble & the Penguin*, which is MGM's first animated feature. We used an orchestra. It was a fun experience."

The list of Parodi/Fair trailers is impressive. Past films include *Stargate*, *Speechless*, *Nobody's Fool*, *Drop Zone*, *Tombstone*, and *El Mariachi*. Among the coming attractions they've done trailers for are *Rob Roy*, *Tank Girl*, and *Wild Bill*. On at least one occasion they thought they were finished with a project, only to find out more had to be done. "We had done a trailer for *Speechless*," Starr recalls, "a Gina Davis/Michael Keaton movie that came out recently. All of a sudden the producers called one night at 6 o'clock and said, 'We forgot about the 20-to-30 demographics. We need a hip-hop version by tomorrow morning.' We stayed up all night. We had a drummer come over at midnight; the trumpet player showed up at 3 A.M. and brought a couple of friends who ended up playing bongos. Sometimes the hours get pretty crazy. It doesn't happen all the time, but occasionally you run into time crunches."

Parodi and Fair also completed the soundtrack for United Artists' new logo, using a 75-piece orchestra. "We were at the Sony soundstage and Shawn Murphy engineered," says Starr. "We're both big fans of his." "He mixed *Jurassic Park* and some of the THX logos that you see," adds Jeff. Starr continues: "And *Batman* and a lot of James Horner scores, including *Class Action* and *Field of Dreams*. He's mixed so many films, so it was a real thrill to work with him and watch how he miked the orchestra. He uses the 'less is more' theory: The fewer mics you have, the bigger it's going to sound. We learned a lot just from that one experience."

Last January, in just 11 frantic days, the Parodi/Fair team completed a soundtrack for the upcoming Lifetime movie, *Shame*, starring Amanda Donohoe and George Wendt. "It always seems as if the music comes last, after the budget's spent," Starr sighs. "A lot of times music is seen as something like a band-aid. It's like, 'Oh, I didn't like that scene. I hope the music can fix it.' I felt this film, however, was cut very well and the subject



matter is very interesting."

Their work began with a five-hour spotting session for the 90-minute *Shame*, which premieres on Lifetime on June 7 and reportedly will be shown 30 times. "A spotting session," Starr explains, "is where the composer, the director, and the music editor look at the film together and talk about where the music should come and what we're trying to portray. We had to be careful not to forecast the end of the movie by the mood of the music at the beginning."

Following the spotting session, the Parodi/Fair team returned to work in their home studio — where they concocted Starr's debut album *Change* in 1991 (see *World View*, Feb. '92). Where did they start? "The first thing that we did was to compose different themes to represent each character in the film," says Starr. This being a two-person project, we wondered how they worked together. "She sits at the keyboard and I'll grab whatever other instrument is around," Jeff explains.

"Jeff plays guitar, bass, French horn, and trombone," adds Starr. "We'll ask, 'How would a French horn sound here?' He'll start playing it and we'll see." "We'll work through ideas," says Jeff. "She does most of the playing. She has a really great feel for the way things work in the picture."

With this film score under their belts, Parodi and Fair seem to have carved a trail for themselves in the industry. Among the projects they're scheduled to work on is an updated theme for the new James Bond flick. They appreciate, however, their experiences in scoring trailers. "One of the great things about the number of trailers we've been doing," admits Jeff, "is that we're constantly under a change of influences, because everything is different. Therefore, you aren't lumped into being a specific kind of composer, such as, 'He composes only guitar music,' or 'She composes only piano music.' There are all sorts of variables." "It's broadening our horizons," adds Starr, "and it makes us feel more confident. It's nice to work on full-length features. But we've been building up to do those for a while, and I really feel like I could be an asset in a variety of situations now, because of the variety of things that we've done."

—Mark Vail





# Look Ma! I'm On The Radio

## AIRPLAY ADVICE FOR INDIE ARTISTS

.....  
It's not easy  
to find radio  
airplay, but  
the rewards  
are well  
worth the  
trouble.  
.....

**T**here's no bigger thrill for musicians than to hear their music on the radio. Unfortunately, unless you've got major label support, regular commercial airplay is an unrealistic expectation at best. But this doesn't mean that you can't use radio to your advantage. With a little persistence and creativity, you can improve the odds of getting your work onto the playlists that count.

First of all, look at commercial stations — the ones that are probably the biggest and most popular in your area. These are generally governed by program directors whose job is to choose from releases by recognized labels. Your chances are slim here, but don't write these stations off entirely. They may have a local heroes show or an open format program whose deejay can play discs he or she is excited about. Find out by calling the station and talking to someone in programming. Let them know who you are and ask if there's some way your music might fit in.

Next, look at syndicated shows and special programming. Is your music, well, kind of twisted? Try *Dr. Demento* (Box 884, Culver City, CA 90232). Do you specialize in new age? Try the popular new syndicated *Echoes* (Box 224, Eagle, PA 19480). You've written a children's song? Contact *Kid's Corner* (c/o WXPB, 3905 Spruce St., Philadelphia, PA 19104). A women's show may want to feature new female performers. Do a little research and find the programs most likely to need your music and most willing to help you get it heard.

Your chances for regular airplay are best on local, college, alternative, and/or public radio. Look for the deejays at these stations whose ears will be most open to you. Don't forget that college radio is under some pressure to break new acts. Still, chances are slim that the local *Monster Metal* show will play your country paean to guzzling beer, so be sure to get your programming information correct.

After you've made your radio contacts, follow up professionally. Send out background information on you or your group, along with your release. Make sure what you've sent is airplay quality and that it fits the station's preferred format: Do they want CD, cassette, LP, or DAT? If you only have cassettes or demo tapes, you may improve your odds of being heard by getting a DAT copy or a CD pressed. And when you've made friends or fans at the stations, keep in touch. Acknowledge their support by keeping them informed of your activities, inviting them to shows, and sending copies of new releases. Their help may be even more valuable as you move ahead in your career.

It's not easy to find radio airplay, but the rewards are well worth the trouble. There's nothing like turning on one of your favorite stations and being able to say, "Hey, they're playing my song!"

—Daria A. Marmaluk-Hajioannou

*Daria A. Marmaluk-Hajioannou is a working musician. She also writes and lectures on how to succeed in the music business.*



◀ FTP server. At the XAL Audio Foundation Library (<http://www.sun.com/sunsoft/Products/Solaris-whitepapers/xalwhitebody.html>)

you'll find plenty of materials for programming audio processing tools in the Sun Solaris environment. The Csound Front Page ([http://www.leeds.ac.uk/music/Man/c\\_front.html](http://www.leeds.ac.uk/music/Man/c_front.html)) will tickle your processors with links to anonymous FTP archives and current Csound development. MIT's Media Laboratory Machine Listening Group (<http://sound.media.mit.edu/>) is filled with technical abstracts on psychoacoustics as well as information on current Group projects. At Computer Music Journal (<http://mitpress.mit.edu/pub/Computer-Music-Journal/CMJ.html>) there are reference lists, technical documents, software source code, and contacts. Look at the CERL Sound Group (<http://datura.cerl.uiuc.edu/>) for tons of DSP materials, sound computation WWW links, and further computer-music-related items.

MIDI nuts can check out the MIDI Farm (<http://www.primenet.com/~midifrm/>) for a massive selection of WWW links to manufacturer materials, a Macintosh digital audio group, and several other MIDI sites. At Leper's Schematics (<http://www.wvu.edu/~n9343176/schems.html>) you'll find tons of GIF and PostScript schematics of gritty guitar effect processors, tube amps, and even a Theremin. Music educators can look at Music Instruction Software (<http://www.cstp.umkc.edu/users/bhugh/musici.html>) for ear training, music flashcards, guitar chord instruction, and piano teaching programs for Mac, PC, and Amiga platforms.

Now that you're filled with Web fever, go and search the world. Who needs sleep?

—Mark Grey



## World View News

◀ **Dick Hyman, Marian McPartland, and Ruth Laredo** joined forces in an unusual series of solo, duo, and trio performances and improvisations at New York's Tisch Center for the Arts. . . . We don't know who the next *Liberace* is, but odds are you'll find him on May 14 at Carluccio's Piano Bar in Las Vegas. That's where and when the Liberace Play-A-Like Competition, sponsored by the Liberace Foundation, takes place. It's too late to register as a contestant, but if you'd like to hear a dozen or so

versions of "I'll Be Seeing You," bring your ermine robe and limo to Carluccio's, 1775 East Ave., Las Vegas, NV 89119. It's easy to find, being next door to the Liberace Museum Costume Gallery on, of course, Liberace Plaza.

**ON DISC.** **Massive Attack** backs **Madonna** on one track from *Inner City Blues*, Motown's compilation tribute to **Marvin Gaye**, due out in September. Also featured on the album: **Bono** dueling with Gaye's original performance on "Save the Children," **Stevie Wonder** doing "Stubborn Kind of Fellow," and **Public Enemy** offering their version of the title cut. . . . **Sven Vath**

releases his next album, *The Harlequin, the Robot, & the Ballet Dancer*, in June, followed just a few weeks later with *Touch Themes*, which includes remixes from *Harlequin*. Both will be out on RCA. . . . *Nice Work If You Can Get It*, the autobiography of **Michael Feinstein**, hits the bookstores this fall. . . . French synth-sist **Hector Zazou** has just released *Songs from the Cold Seas*, a compilation album dedicated to exploring the music of far northern cultures. Guest artists range from the renowned (**John Cale**, **Mark Isham**, **Björk**, **Suzanne Vega**) to the obscure,

including singers from northern Russia and Sweden. (Maybe the Scandinavian answer to Lady-smith Black Mambazo?)

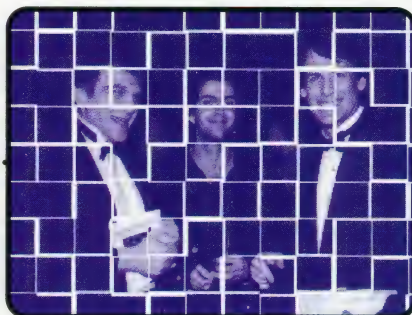
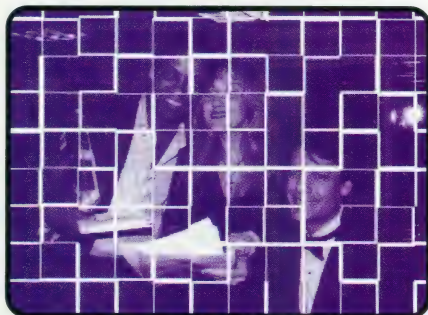
**R.I.P.** One of rock's most significant talent scouts and record producers, **Denny Cordell**, died last February 18 in Dublin, Ireland. Cordell's long list of accomplishments includes production of the classic, organ-drenched Procol Harum single "A Whiter Shade of Pale," recruitment of Leon Russell to help organize Joe Cocker's legendary "Mad Dogs & Englishmen" tour, and discovery of such artists as Tom Petty, T. Rex, and the Cranberries. Cordell was 51. . . .





# High Fashion Meets High Concept

AT DIGITAL HOLLYWOOD



Left: A tieless and tireless Herbie Hancock goes head-to-head with astrophysicist/composer Fiorella Terenzi and conference organizer Victor Harwood. Center: Charlie Fleischer, a.k.a. the voice of Roger Rabbit, joins Dweezil Zappa and Harwood. Right: Timothy Leary hits high Cs with Perry Farrell of Porno for Pyros.

No longer satisfied to be seen as tinsel or plastic, Hollywood stepped up its efforts to join the digital/interactive/multimedia revolution with its fifth annual Digital Hollywood exposition, formerly the Home Media Expo, held late last February at L.A.'s Beverly Hilton Hotel. Hundreds of attendees flocked to the event in hopes of encountering technology's cutting edge — and, this year at least, making it onto Mr. Blackwell's best-dressed list.

You don't see jeans and T-shirts at Digital Hollywood. Instead, at seminars on multimedia production and tools, interactive television alliances, advertis-

ing, virtual characters, shopping in the information mall, and other diverse topics, you see suits, turtlenecks, sport coats, and, on the especially hip, a T-shirt with a suit. Not just any T-shirt, mind you, but one of those Italian silk jobs that sell for around \$150 on Rodeo Drive. If you want to join this Revolution, you've got to look like a guest on *The Tonight Show*.

Things got even more interesting at the first annual Digital Hollywood Awards, where tuxedos and evening gowns were *de rigueur*. According to the show's organizers, this event "honors the entertainment industry and its convergence with digital technologies . . .

as expressed through literature, movies, music, television, video, and the emerging interactive technologies."

Sounds good in principle, but many attendees were perplexed by what seemed like weird groupings of nominees. For example, *The Lion King*, *Forrest Gump*, *Star Trek Generations*, *Myst*, *StarGate*, and *The Mask* found themselves in competition in the category "SuperRealities: Animation & Special Effects from TV, Films, Games, Music Videos & Commercials." And *Wired* beat out *Star Trek TNG*, *Deep Space Nine*, *Tommy*, and MTV's *Liquid TV* for best "Look of the Year." (These guys do wear jeans and T-shirts, so go figure.)



## World View News

Blues piano giant **Sunnyland Slim** died at age 86 on March 17. In a career that stretched back to the early '20s, Slim cut hundreds of discs, both as leader and sideman to such artists as Big Bill Broonzy, J. B. Hutto, and Muddy Waters; Slim played on Muddy's first session in 1947. Born Albert Luandrew in Vance, Mississippi, he was named after one of his own songs, "Sunnyland Train."

### BULLETIN BOARD

**COMPUTER MUSIC CONFERENCE.** The International Computer Music Conference takes place Sept. 3-7 at the Banff Centre for the Arts. Sponsored by the Inter-

national Computer Music Association, the event will embrace "Digital Playgrounds" as its theme. True to its adventurous spirit, the ICMA has decided to replace the traditional keynote speech with a keynote event, a multimedia spectacular whose details are being kept secret for the moment. Other highlights will include an "electric cabaret," described as a live interactive vocal and electronic happening staged in a cabaret setting each night of the conference, and a real-time network performance that unites conference participants with players at sites chosen throughout the world. If you're interested in attending, write to conference administrator Connie Mac-

Donald at ICMC '95, The Banff Centre, Box 1020, Station #8, Banff, Alberta, T0L 0C0 Canada, call (403) 762-6669, or e-mail [icmc95@banffcentre.ab.ca](mailto:icmc95@banffcentre.ab.ca).

**ALL ACCESS IN NEW YORK.** All Access, a music conference and artist showcase, makes its debut July 21-23 at the Manhattan Center Studios and New Yorker Hotel in midtown Manhattan. True to its name, the show will be open to all who want to trade business cards with assorted industry representatives. More than 100 exhibits will offer contact with record labels, plus tips on publishing, production, promotion, sales, and distribution. Seminars and panel discussions will address these and similar is-

ssues, and visiting producers and engineers will stage how-to sessions in the studio facility. Unsigned acts will provide musical distraction throughout the event. To find out how you can join in on the fun, call (201) 714-9898 or (800) 243-9774.

**THE NEXT STEP IN CD.** The artist known as cloud (but never formerly known as Prince) has released what he calls a SuperCD, a 14-song compilation that combines Red Book audio with computer multimedia data. Each song features keyboard parts and most other instrumental and vocal tracks by cloud. It also offers printable lyrics, liner notes, technical notes, a help function, and a full-length video for



These categories wouldn't have been criticized so much if the Awards hadn't been staged so seriously. It was very "Hollywood," both in presentation and substance (or lack of it), with James Coburn, Robert Culp, Herbie Hancock, Dweezil Zappa, Thomas Dolby, and Timothy Leary among the presenters. Perhaps it's inevitable that convergence makes for strange bedfellows. And, as Culp pointed out, this was the *first* Digital Hollywood Awards. Still, more common sense could be applied in the future to defining categories and offering appropriate nominations.

For all the residue of tinsel and plastic, a sense remained that Hollywood's involvement in digital technology is on an irreversible track. For composers, musicians, and music industry software and hardware companies, the import will be whether they receive the kind of recognition and opportunities that are already available to other participants in the digital parade. Of the many seminars and workshops at Digital Hollywood, only two were devoted specifically to music issues. A dozen more music-related topics could easily be added to the stew. Maybe next year the show's organizers will seek out the experts who know these ingredients and can add them to the mix.

—Bob Safir

## Rev. Billy C. Wirtz

### ROAD STORIES CHAPTER 8: MISSED MANNERS



**O**ye of little faith and gastric irregularity: It's springtime, and many of you will be hitting the road and enjoying cuisine at America's truckstops. So here are a few highway etiquette tips that could mean the difference between 911 and a big 10-4.

**Entering the Dining Room.** Always proceed in a quiet, deliberate, Johnny Cash-like manner. Never stare at the velvet paintings and exclaim, "What an adorable little place!" As a matter of fact, avoid using the word "adorable" altogether.

**Proper Attire.** Stay away from handwoven ponchos and brightly colored, oversized berets. Never wear one of those Latvian fisherman's hats with the earmuffs.

**Washroom Demeanor.** Even in truckstops, good hygiene is essential. However, always remember the washroom is not the place for remarks about "Peterbilts" or "Big Rigs."

**Your Waitress.** Probably a buxom young cutie named after her mother's favorite china and dressed in an Alan Jackson T-shirt. Remember my Uncle Cecil's second favorite saying: "Courtesy is the STP in the slant six of life." Avoid all references to big biscuits.

Never try out the *Five Easy Pieces* routine. In mountainous areas, never call attention to the striking resemblance between her and most of the other employees.

**Mealttime.** A chance for you to "ratch-et-jaw" with some good buddies at the counter. Just remember Rev. Billy's universal law of truckstop conversation: If you can't paint it, shoot it, or kiss it, don't talk about it.

**Departure.** Never describe the meal with words like "heavenly" or "divine." Just suck loudly on that toothpick and leave a good tip. Why? If every musician in the world left that waitress a good tip, she could eventually quit the truckstop, pay off the trailer, buy a bus ticket to Birmingham for her and the kids, get away from that egg-suckin' dog of an ex-husband, send her kids to a decent school, expose them to good music, and drastically reduce the chances that ten years from now there'll be yet one more 6'6", dentally-impaired Prozac casualty standing over your piano with an empty longneck in his hand, glaring at you with his one good eye and yelling for "Skynyrd!"

**Last Words.** Remember my Uncle Cecil's number one favorite saying: "When ya hear a sneeze from the kitchen, cancel that order for nachos!"

*The Rev.'s latest album, Pianist Envy, is still available on the Hightone label.*

Macintosh playback. The breakthrough here is that the data for these features is not assigned to track one: the disc can be played on any CD player without having to skip over any racket-ridden opening cut. A similar project was released late in '94 by PAMS in Australia, on which six mixes of a single song were offered. For more on the SuperCD, contact Cloud Sound at cloud98765@aol.com or fax (408) 438-8004.

**DEEP LISTENING WITH PAULINE OLIVEROS.** On June 18-23, adventurous composer Pauline Oliveros and t'ai chi practitioner Heloise Gold will lead their fifth annual Deep Listening Retreat at New Mexico's Rose

Mountain Retreat Center. Open to musicians and non-musicians alike, the event will encourage participants to explore new ways of listening to sound and music through a program of exercises, meditations, and appreciation of nature in the beautiful Sangre de Cristo Mountains. Indoor accommodations as well as camping facilities will be provided, and vegetarian meals will be served. All this is available for \$450. To register, call the Pauline Oliveros Foundation at (914) 338-5984, fax (914) 338-5986, or send e-mail to oliverosfd@aol.com. **READIN' & ROCKIN'.** This year's updated *Yellow Pages of Rock* includes more than 400 names, ad-

dresses, and phone/fax numbers for contacts you can use in the music industry, from radio stations in a variety of formats to artist managers, music publishers, labels, agents, and other suit-clad species. Copies are available for \$115 from Album Network, 120 N. Victory Blvd., Burbank, CA 91502; to order by phone, call (800) 222-4382 or (818) 955-4000.

**HISTORIC E-MUSIC STUDIO RESCUED.** During the early years of electronic music, the Siemens Studio in Munich was a creative hotbed. Under the direction of composer Josef Anton Riedl, it acquired a reputation as "a musical instrument serving composition rather than just another elec-

tro-acoustic setup," as Hans G. Schürmann noted in the German magazine *Kulturchronik*. But a confluence of circumstances, including a perceived decline in the quality of work being done, forced the studio to shut down in 1966; its equipment was locked away in storage, its future uncertain — until now. The Deutsches Museum in Munich has acquired the Siemens assets, restored the vintage gear to working order, and reopened the facility as a permanent exhibition. To see how **Pierre Boulez**, **György Ligeti**, **Mauricio Kagel**, **John Cage**, and other musical giants conducted their most daring electronic experiments, check it out next time you're in Munich. ■



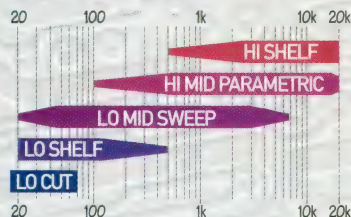
# WHY MACKIE IS YOUR BEST 8-BUS

Lately, several big pro audio companies have gone out of their way to "mention" us in their own 8-bus console ads. Many satisfied Mackie owners have urged us to shoot back with hardball comparisons of our own. But that's not our style.

Greg believes that if a product is really good, it should speak for itself — without resorting to slagging the competition. First in a series, this ad details some of the features that we believe make our 8•Bus the best recording or PA console value available today for under \$20,000.

## Comprehensive equalization for creativity and problem-solving.

To quote Electronic Musician<sup>1</sup>, "It's no secret that the versatility and pristine sonics of the 8•Bus EQ have astonished jaded



pros and home hobbyists alike. The 4-band EQ section includes two shelving controls fixed at 12kHz and 80Hz; parametric high-midrange EQ with a 500Hz to 18kHz sweep and a bandwidth that can be adjusted between three octaves and one semitone; and low midrange EQ with a 45Hz to 3kHz sweep. A full 15 dB of boost or cut is provided for each band. In addition, an 18 dB/octave low-cut filter is set at 75 Hz. That's a heck of a lot of firepower!"

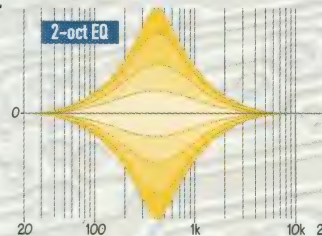
No kidding. But we also like that part about pristine sonics. One of the

*'The 32•8 is so clean that you don't really hear the EQ; everything sounds deceptively natural, which is really great.'*

We wouldn't have it any other way.

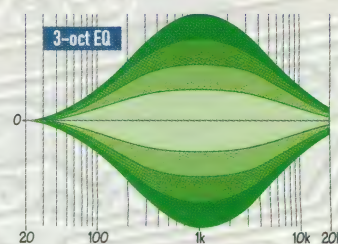
## What parametric EQ means to you.

The biggest gun in the 8•Bus' EQ arsenal is its true parametric high midrange EQ. Conventional sweepable midrange (like our 8•Bus' low mid), has a fixed bandwidth of about 2 octaves. No matter how high or low in frequency you sweep it (or how much you boost or cut it),



2-octave EQ's contour stays the same. While extremely useful, it's just one tonal "color." Having to rely on swept,

2-octave midrange alone is like being asked to paint a picture with only a bucket of bright yellow paint.

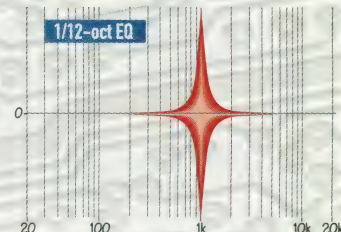


natural-sounding, it can unobtrusively change the character of a track without noticeable tonal intrusion. If you're used to conventional 2-octave swept midrange, you'll be surprised at how much 3-octave EQ you can add without things starting to sound obnoxious.

On the other hand, there are times when you want what can only be called surgical

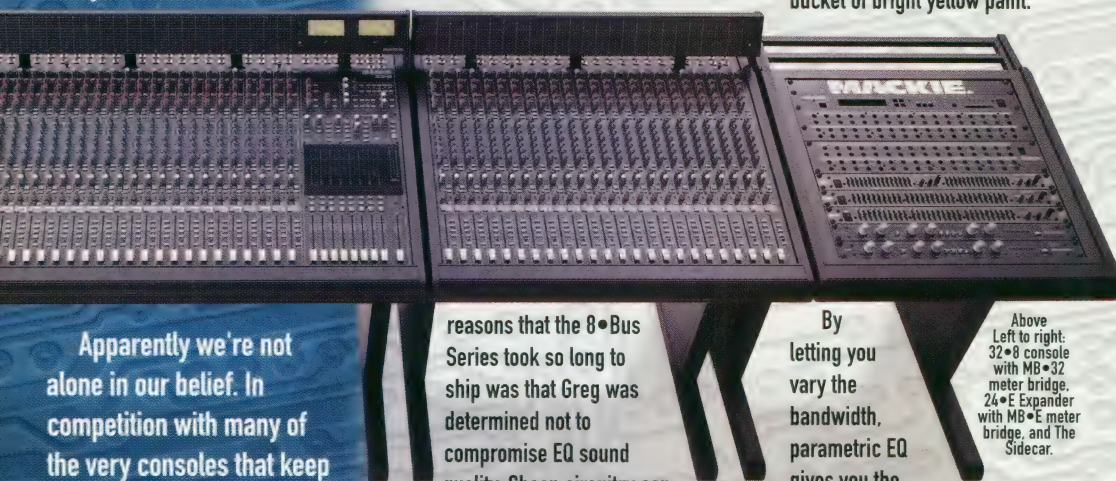
EQ. At its narrowest, our parametric Hi Mid is four times as precise as a 1/3rd-octave graphic equalizer. It's like having a delicate artist's brush and a magnifying glass for erasing or enhancing tiny details.

Between three octaves and 1/12-octave is a vast range of tonal colorations, nearly all possible only with parametric equalization. And, since our "HI" mid's sweep range extends from 18kHz all the way down to 500Hz, your creative palate extends



over six octaves — to our knowledge the widest midrange sweep currently available<sup>3</sup>.

competitors to at least one reviewer has taken us to task over this phrase. Okay, we apologize to all of you Anglophiles. We were merely trying to explain why we consider wide bandwidth EQ such a powerful tool and where we got our inspiration for including it... not attempting to rekindle the Revolutionary War.



Apparently we're not alone in our belief. In competition with many of the very consoles that keep "mentioning" us in their ads, we recently won the coveted MIX Magazine TEC Award for Small-Format Consoles. As well as LIVE! Sound magazine's Best Front of House Mixer Award.

To learn why, call us toll-free for our detailed, 24-page 8•Bus brochure.

reasons that the 8•Bus Series took so long to ship was that Greg was determined not to compromise EQ sound quality. Cheap circuitry can create all sorts of sonic grunge that may add distinctive "character" to a console's EQ... but Greg's goal was clarity, not eccentricity.

To further quote Electronic Musician, "In all applications, the 8•Bus EQ was extremely musical and transparent... One of the engineers summed it up best by saying,

<sup>1</sup> September 1994 issue, page 64, in a sidebar to an article on The British Invasion (of consoles). We urge you to read the whole thing so that we don't get in trouble for quoting stuff out of context.

By letting you vary the bandwidth, parametric EQ gives you the equivalent of a full rainbow of tonal "colors" in your artistic pallet. Spreading high midrange EQ over three full octaves transforms it into an extremely subtle — yet extremely dramatic — effect<sup>2</sup>. Sweet and

<sup>2</sup> This is what we meant when we used the phrase "Expensive British Console Sound" in our first 8•Bus ads: Classic English desks were the first to offer extremely wideband (i.e. greater than 2 octaves wide) equalization. Obviously we didn't make ourselves clear on this point, because everyone from our

Above  
Left to right:  
32•8 console  
with MB•32  
meter bridge,  
24•E Expander  
with MB•E meter  
bridge, and The  
Siderar.

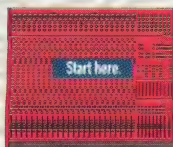


# CONSOLE CHOICE

## An expandable console system.

If you can successfully foretell the future, you might as well play the commodity futures market, make a zillion bucks and buy a 128-channel SSL console.

However, because most of us are less clairvoyant



and a lot poorer, we've designed a system that can grow with your needs and budget. Start with our 24•8 or 32•8 console<sup>4</sup>. Then, when your tax refund comes back, add an optional meter bridge<sup>5</sup>. When you land that Really Big Project That Pays Actual Money, add more input channels (and tape returns) in groups of twenty-four with our 24•E Expander console<sup>6</sup>.

You can keep right on growing your Mackie 8•Bus console system up to 128 channels or more.

And, beginning this spring, you can automate the whole shebang with our extremely affordable Universal MIDI Automation system. It consists of the OTTO-34 VCA gain cell unit, wicked-fast Ultramix™ Pro software and the innovative OTTOPilot™ control interface. Both the hardware and the software were debuted in final form at last Fall's AES Convention. They received rave reviews from seasoned pros who are used to working with "mega-console" automation systems.

## Very Low impedance Circuitry (VLZ) for very low noise.

We like to say that the 8•Bus console's monster 220-Watt Power Supply was a product of typical, fanatical Mackie over-engineering. But one of our real motives lies at the other end of the power supply's multi-voltage connecting cable.

At room temperature, all electronic components create thermal noise. Cumulatively, this can become audible and objectionable. We design around thermal noise by making internal circuit impedances as low as possible in as many places as possible. For example, resistor values in our mix bus are 1/4 the value of those typically used — hence thermal noise is proportionally lower. Another advantage of VLZ is that low-



impedance circuitry is far more immune

to crosstalk problems.

VLZ isn't easy to achieve. All circuitry must be thoroughly buffered. Plus, console current consumption goes way up, requiring a beefy power supply. Such as the massive, 31-pound, power supply we ship with each 8•Bus console.



## +4dBu operation throughout.

This is a biggie in terms of overall noise and headroom. There are two current standards for console operating levels: -10dBV and +4dBu. Without knocking our competition, let's just say that +4dBu is the professional standard, used with all serious recording, sound reinforcement and video production

components. This higher operating level effectively lowers the noise floor and increases dynamic range. Our 8•Bus consoles operate exclusively at +4dBu (although their tape outputs and returns can be switched to -10dBV to match other semi-pro/hobbyist gear you may still own).

## Built like tanks.

Our 8•Bus Series consoles have been in the field long enough to gain an almost legendary reputation for durability. For example, a lot of them absorbed the impact of toppling monitor speakers during last year's Los Angeles earthquake with little more than a few broken knobs. Others have survived drops off loading docks, power surges that wiped out whole racks of outboard gear and beer baths, not to mention hundreds of thousands of air and semi trailer miles with major tours<sup>7</sup>. Read our 8•Bus tabloid/brochure to learn about the impact-absorbing knob/stand-off design, fiberglass circuit boards and steel monocoque chassis that make our consoles so rugged.

Bottom line: You simply can't

buy a more dependable console. Maybe that's why *LIVE! Sound* magazine readers voted us their 1994 "Best Front of House Console."

<sup>7</sup> Including the latest Rolling Stones, ZZ Top, and Moody Blues tours. (Footnote to the footnote: Mention in this ad denotes usage only, not official endorsement).

## We could go on this way for pages.

If we got into the details of 8•Bus features like special RFI protection, triple tape bussing, in-place stereo solo, constant power pan pots, or the extra 15dB of gain available at the 8•Bus's aux sends and returns, this ad would have even teenier type than it already has.

For these and other facts, call us toll-free (8:30AM-5PM PT) and ask a real live person for our obsessively-detailed, 24-page 8•Bus brochure.

## OUR 8•BUS CONSOLES REALLY WORK, THE UPDATE:



Ricky Peterson mixed ♀'s recent hit single, "The Most Beautiful Girl in the World" on his Paisley Park Studio 32•8 console.

Queensryche's new platinum album, *Promised Land*, was totally tracked on Mackie 8•Bus consoles (with help from OTTO-automated CR-1604s). A sonic (and musical) masterpiece, it has the tight bass, crisp highs and ear-boxing dynamic range that's becoming an 8•Bus console signature. Need more proof as to why pros prefer Mackie? Buy this superb CD.

<sup>3</sup> ...on a comparably-priced 8-bus console. Oops! We're starting to sound competitive.  
<sup>4</sup> \$3,995 (24•8) and \$4,995 (32•8) suggested retail. Slightly higher in Canada.  
<sup>5</sup> \$795 (MB•24) and \$895 (MB•32) suggested retail. Slightly higher in Canada.  
<sup>6</sup> \$2,995 suggested retail; MB•E meter bridge \$695...Yadda yadda, Canada, etc. etc.

# MACKIE.

16620 Wood-Red Road • Woodinville • WA • 98072 800/898-3211 206/487-4337  
 mackie.com • Outside the US 206/487-4333 • Represented in Canada by S.F. Mktg. 800/363-8855



## Frankfurt Musik Messe '95

Ask attendees at this, the world's largest exhibition of musical equipment, what the hippest item at the show is, and you'll most likely hear: "Why, the beer, of course." Indeed, they don't brew it any finer than in Germany, and a significant number of manufacturers take advantage of that fact by setting up mini beer gardens in their booths on the convention floor — much to the delight of hot and tired show-goers and editors of American music magazines.

Of course, beer isn't the show's only attraction: You'll also find a significant number of very cool musical instruments on

dedicated to pro audio and the other to sound reinforcement. In other words: The Musik Messe is one helluva mother of a show.

Since the convention follows so closely on the heels of our own stateside NAMM show, there traditionally aren't a tremendous number of new products making their debuts in Frankfurt. But we were treated to a couple of eye-openers. First up: Another NBT (Next Big Thing) from **Korg**. Called the **Prophecy Solo Synthesizer** (yes, the name is a reference to the classic Prophet-5 synth). The new synth is based on the same DSP synthesis technology used in the company's Wavedrum. With five

the price within reach. The official word is that the Prophecy will be "way under \$2,000."

**Technics** also debuted a synth based on physical modeling technology — or, in their words, "Acoustic Modeling Synthesis" — called the **WSA** (price to be announced). We saw a prototype whose feature set wasn't yet complete, so the details that follow are subject to change. The unit uses a type of modeling based on drivers and resonators. The drivers are single-cycle samples, of which there are 128, with plans to allow for user samples to be loaded. The output of the drivers is then routed to either or both of two resonators,

reach, **E-mu Systems** may have the relief you need. They introduced the **e-64**, a lower-priced but eminently capable version of their top-flight EIV. The new e-64, priced at \$3,295, features 64-voice polyphony, up to 64Mb sample RAM, digital resonant filters and EQ, eight polyphonic outputs, an icon-based interface, graphic waveform editing, 128x oversampling A/D and 18-bit D/A, resampling while playing, the ability to audition samples from disk, and an interface for an alpha-numeric keyboard. Sowaddaywaytinför?

**Generalmusic** announced an update for their **WX Multimedia Workstation**. The upgrade offers reprogrammed ROM sounds, 24 new performances, 64 new styles and variations, a conversion function for S Turbo Series RAM sounds and waveforms, a lyric and chord editor, and the ability to read MIDI karaoke files in Soft Karaoke and Shout formats. Several new portable keyboards were on hand, the **CD10**, **CD20**, and **CD30 Hyperkeyboards** (prices to be determined). The keyboards offer 32-note polyphony, General MIDI soundsets with 256 voices, RAM for downloading user samples, 96 on-board and eight programmable accompaniment styles, multieffects, a 10,000-note four-song sequencer, a disk drive, and built-in stereo speakers. Also being demoed were the **RP1**, **RP2**, **RP3**, and **GRP3 "Real Pianos"** (prices to be determined), which feature 88-note weighted action keyboards, 16 sounds with 16 variations, two-track sequencers, and wood cabinetry.

For analog buffs, **Touched By Sound** was offering the **Aviator**, a single-space rack-mount analog

hand, from seven-foot-tall recorders (the wooden, not the digital kind) and exotic African percussion to the latest in technology-busting synthesizers, plus software, workstations, pianos (including a chrome, red plastic, and clear acrylic model that was, er, startling), speakers, mixing consoles, organs, amps, guitars, laser lights, digital recorders, harmonicas, accordions, and just about every effects processor ever made. Oh yeah, and 14 zillion portable keyboards from about as many manufacturers. This year, in fact, the show had grown in size so much that two additional convention halls were opened up, one

algorithms on board, the Prophecy is designed to reproduce analog timbres (complete with hard sync and multimode resonant filters), "VPM" (for Variable Phase Modulation, a synthesis technology that would, were it not for patents, be known simply as FM), and physically modeled brass, reed, and plucked string instruments. The unit features a 37-note keyboard, two control wheels, a ribbon controller, on-board effects, and an arpeggiator. As its name implies, the Prophecy is a monophonic synth; Korg hopes that musicians will approach it as an add-on instrument to their existing rigs. To that end, the company is keeping

which model the body of the instrument. This technique doesn't offer all of the expressive nuance you get from systems that model the drivers and their inherent nonlinearities, but the trade-off is impressive: The WSA is 64-note polyphonic — a significant break from the more limited confines of traditional model-based synths. (Gads! We can't believe we're already referring to physical model synths as "traditional.") The unit also features sound ROM for sample playback synthesis, on-board effects, and a built-in sequencer.

If you've been drooling over high-end samplers but their prices keep them out of your



*The Quasimidi Raven.*



synth that features three VCOs, two multimode VCFs, a 24db/octave lowpass VCF, two envelope generators, an envelope shaper, four VCAs, two LFOs (one for pulse-width mod), sample and hold, and a noise generator. Price in dm (Deutschmarks) is 2,590, which at today's pathetic exchange rate would make the U.S. price approximately \$1,850. Another analog synth, the **MS-404** (\$470), was on hand at the **Doepfer** booth. This single-space rack-mount is a MIDI controlled *monophonic* synth with a VCO, resonant VCF (24dB/octave), VCA, ADSR envelope, two LFOs, and a MIDI-to-CV interface. Both the MS-404 and the Aviator feature external audio inputs and access to parameters via dedicated front-panel knobs.

Feeling ravish? Going techno? **Quasimidi** introduced the **Raven**, a keyboard dedicated to producing dance/techno sounds and grooves (DM 2,498; approximately \$1,775). The style-specific unit offers a complement of CR-78 and TR-909 drum sounds, the requisite analog basses and techno noises, and an interactive sequencer that automatically generates thumping pumping grooves as you lay your hands on the keys. One word of caution: Most everyone at the Quasimidi booth had seriously pierced body parts, partially/fully shaved heads, chains hanging from a large number of the aforementioned body parts, and a distinct predilection for banging their heads against the walls (which were, fortunately, covered in

Sonex). We don't know if this is a result of the sounds produced by the Raven or a requirement for producing said sounds. Whatever, you've been alerted.

In the world of digital audio, **OSC** was on hand doing demos of the new **Multitrack Tool** (\$199), which, when used with their Deck II software and a Power Macintosh and with Digidesign Pro Tools, Sound Tools II, or Audiomedia II hardware, provides from 16 to 24 tracks of digital audio. Deck II (\$399) is also boasting some new features, including real-time in-line effects (such as delay), compatibility with Adobe Premier plug-in architecture

quired), faster screen redraws, and enhanced track capacity.

**Digidesign** debuted their Deck-like software, called **Session 2.0** (\$395), which allows two tracks of audio to be simultaneously recorded and four to eight tracks played back on a Power Macintosh without use of external audio hardware. Features include parametric EQ, synchronization with MIDI sequencing programs and QuickTime video, graphic automation of volume and pan, user-definable crossfades, playlists for regions and automation, faders with groups, and support for OMS 2.0. For the PC, there's **Session Software with Audiomedia II** for

MIDI clock sync, and synchronization with MIDI and AVI (video) files (that's where the "multimedia" part comes in). At only (\$199), this program could very well make some waves.

If hardware-based audio is more to your liking, check out **E-mu Systems'** new eight-track hard disk recording system, code-named "**Buckeye**" (price to be determined). Details are very preliminary, but the unit will feature eight tracks of random-access recording and editing, dedicated tape machine-style transport controls, a jog/scrub wheel, a 240 x 64 LCD with graphic waveform editing utilities, S/PDIF I/O, and an optional 1Gb internal hard disk.

Okay. We've saved the best for last (not that all the stuff we've been talking about isn't worthy of significant attention). At last year's Messe, one particular software company made a very big impression on the professional music world with their flashy splashy software, which featured the ability to manipulate digital audio in never-before-available ways. This year, again, the company wowed and amazed onlookers with a display of MIDI sequencing/digital audio prowess that was dazzling not only in scope, but in the sheer number of new features. The company: **Emagic**. The product: **Logic Audio v.2.5** for the Mac.

We can't possibly go into all the details; a quick rundown will have to do for now. New audio features include the Audio Energizer, for increasing a file's maximum level without introducing distortion, phase-shift, or other undesirable artifacts; the Silencer, a combination spike removal/noise reduction utility; the Quantize Engine, for quantizing audio to any MIDI quantization template, including Cubase and DNA grooves; Hyper draw, for creating volume and pan data with an unlimited number of adjustment points; background processing of audio tracks; and looping of audio regions with the same flexibility as MIDI tracks. New sequencing features include Touch Tracks, for triggering playback of sequences from MIDI note-on commands or ASCII keys, unlimited markers, ▶



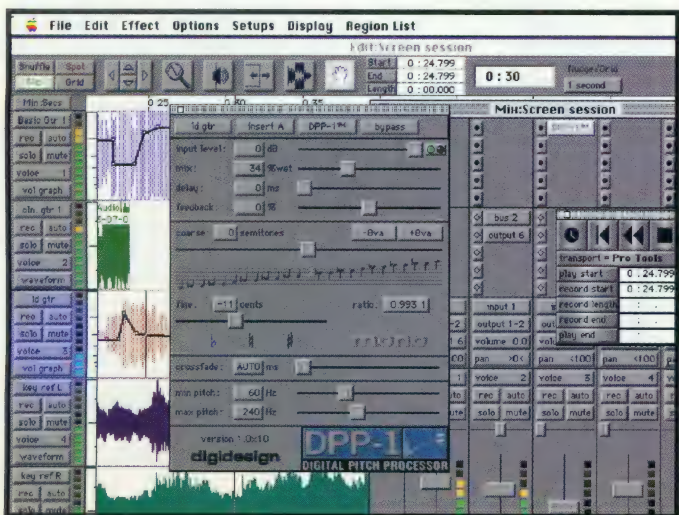
Emagic Logic Audio 2.5's Hyper Draw graphic editing and Proton audio link to Digidesign's TDM system.

(which means you can use software plug-ins designed for Premier, no additional hardware re-

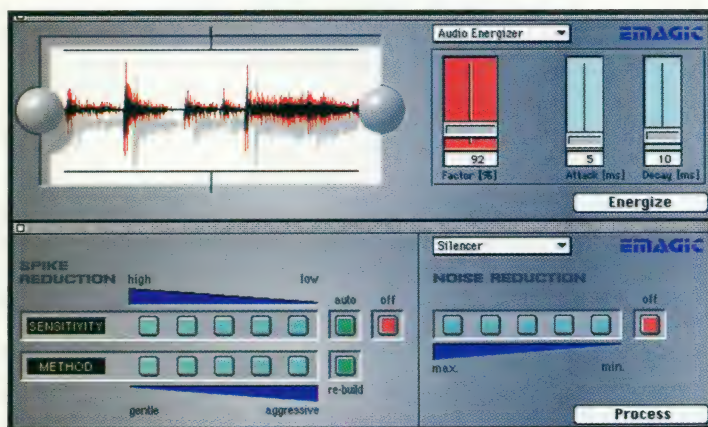
**Windows** (\$395; bundled free with Audiomedia card, \$1,295). This version of the system supports two-track recording and four-track playback, parametric EQ, on-screen mixing, effects sends and returns, and digital I/O.

Also for the PC, **SEK'D** was offering **Samplitude Pro for Windows**, a hard disk recording/editing, sampling/looping, and "multimedia" program. The software features multitrack recording using up to four Windows-compatible 16-bit soundcards, non-destructive editing with undo, digital processing (including delay, reverb, vocoding, surround sound, time compression/expansion, and EQ), automatic loop optimization, loop crossfade, SMPTE/MTC and

Digidesign Session volume and pan contours (L), output mixer (R), and transport controls.







Emagic Logic Audio 2.5 audio processing modules.

and a 30,000-character note pad with style, size, font, and color per character for each marker. On the scoring side, there's now a Voice Separation Tool for assigning notes to polyphonic voices, a Sizer tool for score symbols, more score symbols, including tempo markings, arpeggio lines, and bar repeats, more layout parameters, automatic style assignment, and import/export of score styles.

Logic 2.5 has much more to offer, including a new hierarchical menu management scheme (and a new manual to help make it easier to learn the new menus). But rather than go on any more about it, we should mention that a Power Mac native version will soon be available, and that ver-

sion 2.0 of Logic for Windows was recently released.

We wouldn't know about any of this stuff if it weren't for the awesomely kooky demo the company gave on the show floor. With the aid of nine television screens, a bilingual host (who donned an assortment of odd hats and tacky coats to traverse the QuickTime movie globe behind him), an Emagic CEO with an itchy ear and a penchant for feather boas, and a stiff-lipped waiter serving exotic tropical drinks complete with umbrellas and fruit, the company entertained its way into the hearts and minds of the dazzled onlookers. Best of show? You bet. Oh, and the software isn't bad, either.

Emagic Logic Audio 2.5 stereo sample editor.



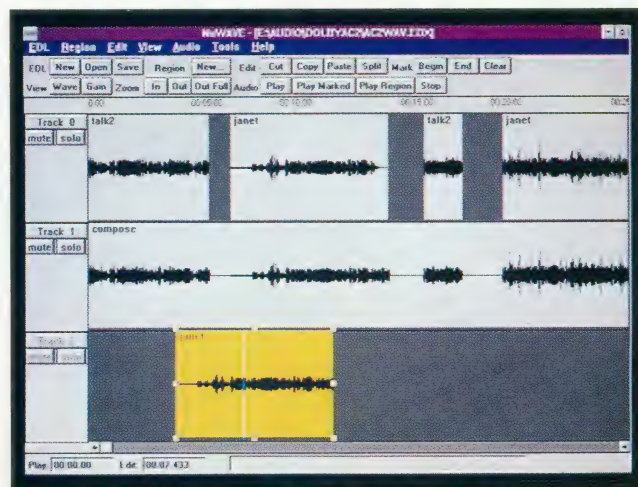
## Sound Bytes

**Ensoniq:** Twelve new CD-ROMs for ASR-10, TS-10, and TS-12. Titles include *AS Archives* (compilation of AS-1 through -14 libraries plus TS essential samples collection), \$99; *L.A. Riot, Volumes 1 and 2* (hip-hop, rap, and DJ effects), \$199.95 each; *Best of Sonic Arts* (pianos, electric pianos, basses, guitars, and drums) \$199.95; *Jason Miles Psychic Horns* (R&B and pop horns), \$199.95; *Analog/Digital Synth Resource*, \$199.95; *Orchestral, Ethnic, Pop/Rock, Keyboards, Drums, Percussion* (all produced by InVision Interactive), \$99.95 each. Also released: six new disk collections of sampled sounds for the ASR-10 and TS series instruments. *Phunky Phat* (dance, R&B), *Euro Klub* (pop, techno, dance), *Techno Synths, Volumes 1 and 2* (vintage and current synth sounds), *Hip Hop Essentials, Volumes 1 and 2* (hip-hop and DJ effects); \$39.95 per collection.

**E-mu Systems:** Six new CD-ROMs for the entire Emulator product line. Titles include *Psychic Horns* (R&B and pop horns produced by Jason Miles), *Elements of Sound, Volumes 1 and 2* (E-mu standards in 1Mb and 2Mb banks, respectively), *ESI-32 150Mb Production* ('90s sounds optimized for the ESI-32), *General MIDI* (including banks in GS format), *Mr. DJ Dance Groove construction Kits* (loops and building blocks for dance grooves); \$149 each.

## Softnotes

**Antex** has announced **NuWAVE**, an audio editor designed specifically for editing WAV files that have been compressed in Dolby AC-2, MPEG Layer I/II, MS-ADPCM formats, in both 8- and 16-bit resolutions. Up to four tracks of audio are supported, with unlimited numbers of audio regions per track, with real-time fade-in/out. \$595; demo disk: \$25, refundable upon purchase.







**Eye & I/Voice Crystal:** *Funky Rhythms You Can't Live Without*, contains drum loops, horn spats, drones, vocoder effects, bass lines, turntable scratches, and more; audio CD, \$99.95. *Legacy Volume 1, The Definitive Analog Sampler*, contains 187 fat multisampled programs and 370 percussion sounds created from classic synths; audio CD, \$89.95, CD-ROM (Akai S series format), \$189.95. *Maximum Impact, The Alternative Sampler*, contains 72 minutes of industrial, techno, and dramatic sounds; audio CD, \$79.95. *Big Fat, The Beats & Loops Sampler*, contains 300 beats, loops, and sound combinations, including bass, guitar, horns, and vocals, in hip-hop, dance, R&B, smooth, and tribe styles; audio CD, \$79.95. Now being distributed by Voice Crystal is the *Steve Reid Definitive Percussion Sampler*; audio CD, \$89.95. Also available: four new sound disks for the Kurzweil K2000, \$49.95 each for disks 1-4, \$70 for disk 5 (two-disk set); three PCMCIA cards for the Alesis QuadraSynth/S4, \$128 each.

**Patchman Music:** Five soundbanks for Yamaha instruments. Volume 1 for VL1/m contains 64 patches designed for breath controller use. Includes flute, trumpet, sax, harmonic, violin, and synth leads; VL1 floppy disk, \$39.95 plus \$2 shipping. Volume 2 for TX802 contains 64 voices and 64 performances with new age layers, analog synths, stereo pads, and bass/keyboard splits; Mac self-loader, Opcode (Mac), Mac or PC SMF, \$25 plus \$2 shipping. Volume 12 for SY/TG77 and Volume 15 for SY99 contain analog emulations. Volume 14 for SY99 contains light, airy meditative sounds and new age keyboards; SY99 floppy disk, Mac self-loader, Opcode (Mac), Mac or PC SMF, \$25 each plus \$2 shipping. Foreign orders add \$10.

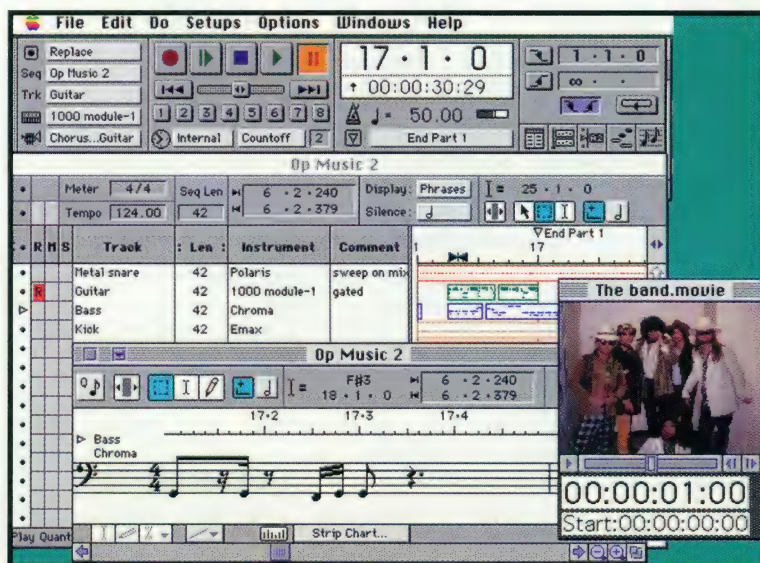
**Kid Nepro:** Four soundbanks for the Roland JV-80/JV-880/JD-990/JV-1080 Pop, Vintage, Orchestral, and World expansion boards. 64 patches per volume; all disk formats, \$40.00 per set.

**T**ired of losing hard disk installs when your drive fails? Tired of having to remove them when you have to defrag your drive? Key Disk Terminator, from Sydney Urshan Music, is a Mac program that lets you make and run an unlimited number of copies of your master key disk without ever losing the installs on the disk (\$99 plus shipping). Now, now, children, don't get any ideas about pirating expensive music software — that's not the point. Instead, you should simply go about your business secure in the knowledge that the program you bought and paid for won't subject you to unnecessary down-time just because there are other jerks out there who try to take advantage of unprotected software. End of lecture.

**O**pcodes OMS Movie Player adds the ability to play QuickTime movies from within OMS-compatible applications, such as Vision, Studio Vision Pro, and Max. The video can be synchronized to the sequenced information via MTC, allowing for easy spotting of music and sound effects to picture. Free with Opcode OMS-based sequencers; downloadable for free from BBS services (including AOL, CompuServe, and the Opcode Web Site); \$19.95 directly from Opcode.

**I**nterpreter is a new utility from Gallery Software that lets you use your Mac to browse Akai S1000 data on CD-ROM, optical drive, or hard disk, audition the samples directly from disk, then transfer them singly or in groups to the Mac in AIFF, Sound Designer II, or .WAV format. For now the \$295 program only converts sample data, but an update is expected that will allow conversion of program data into SampleCell II instrument data.

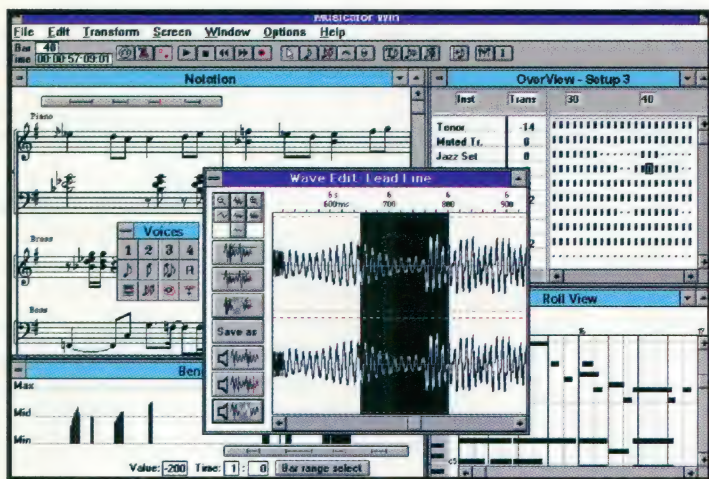
**D**igidesign is now shipping the **DPP-1 Pitch Processor** plug-in for Pro Tools/TDM (\$495), which provides four octaves of stereo pitch-shifting with up to 125ms delay per channel.





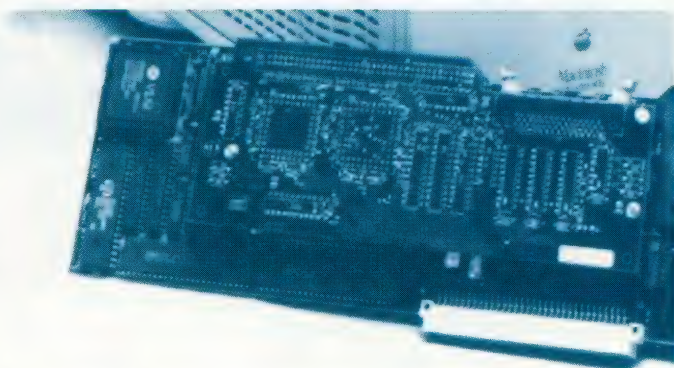
## Updates & Options

**D**igidesign: **Pro Tools III v. 3.1 software** adds support for up to 48 record/playback tracks, on-the-fly punch-in, support for PostView 3.1 plug-in (for integrated digital video and machine control), OMF utilities, and ADAT interface performance enhancements. Free to registered owners.



**M**usicator: Version 2.1 of Musicator Win adds digital audio recording and playback to the Windows-based sequencing/notation program; \$299.

**E**-mu Systems: EIV MIDI option card (\$199); adds 32-channel multi-timbral operation capabilities to the EIV. ESI-32 S/PDIF digital I/O option card; \$200. Version 2.0 software for the ESI-32 adds SMDI support for Mac and PC, audio scrub, load individual presets and samples from floppy disk, and Mac drive sharing capability; \$49.95.



**L**exicon: NuVerb daughterboard and v 1.5 software add support for TDM. Nuverb: \$1,795; TDM daughterboard: \$495.

**M**usitek: Version 2.0 of MIDIsan for Windows adds a TWAIN-compatible interface and scanner driver, a GM-compatible sequencer, a 50–75% increase in accuracy, and a 25–50% increase in speed. MIDIsan: \$299; upgrade: \$69.95.

## The XM SPEC: Is MIDI 2.0 finally at hand?

**W**e've noted a few unofficial extensions of the General MIDI spec — Roland's GS and Yamaha's XG formats, to be specific — that enhance users' musical experience by offering broader sound sets and a greater number of features than what is laid down in GM. But neither of these approaches addresses the fundamental nature of MIDI or, rather, its fundamental limitations. XM, or Extended MIDI, from DDD (Digital Design & Development) is a proposed hardware (a chip)/software system that is designed to significantly enhance the capabilities of MIDI, without losing or changing the current specification, or obsoleting current-generation instruments.

The XM system is based on ternary logic, which allows more information to be packed into MIDI messages than the current binary method. As such, it is capable of delivering denser messages, yet still retaining compatibility with existing MIDI devices, to whom the additional data will remain invisible.

Some of the more obvious practical advantages of the new technology include 324 MIDI channels per cable, 510 levels of resolution (for velocity, controller data, etc.), 4,374 non-linear values (for con-

troller numbers, program change commands, etc.), and bi-directional communication on a single cable. New possibilities would include sample dumps with 24-bit resolution, microtonal information within the note message, and the creation of new instructions, such as "update" and "relative value" messages for automated mixing and sound editing.

Due to some logistical confusion, XM's inventor was unable to present his work to the MIDI Manufacturers Association (MMA) at their January NAMM meeting. Since then, however, he has submitted the proposal in writing. As per the MMA procedures, the work is being reviewed and ultimately the group will make recommendations. The MMA isn't noted for moving at blinding speed, so don't hold your breath waiting to see if XM gets the go-ahead nod. On the other hand, the MMA only sets forth recommended practices, so if some enterprising outfit wants to include XM in their instrument, there's nothing to stop them from doing so.

One last bit of trivia: With XM, you can access 753,145,430,616 presets. Better start thinking of names.



# The Lauriston Report

**PCI Macs This Summer?** The trade papers and Internet news-groups are rife with hearsay about the specs for Apple's forthcoming PCI-slot PowerMacs. (PCI is an industry-standard bus that's several times faster than NuBus, which Apple will be phasing out over the coming year.) For musicians, the most interesting of the rumored Macs are two new three-slot models. The 7150 will reportedly have an 80-100MHz PPC601 CPU and a new case design, and will cost under \$2,000. The hot 8400 will have a 100-120MHz PPC604,

use the same case as the 8100, and cost under \$3,000.

The good news is that Apple may break with tradition and sell these machines bare, with no factory-installed RAM or hard drive, so you'll be able to get just the configuration you want and save money by buying from discounters. The bad news is that you won't be able to swap over your old 72-pin SIMMs: Apple is apparently switching over to the faster but incompatible 168-pin DIMMs (Dual Inline Memory Modules) used in fancy Unix workstations.

**New CPUs for PCs and Macs.** Since my last column, chip manufacturers for both Mac and PC have come out with a slew of fast new CPUs. Even if you're not the kind of person who buys the latest and greatest, this is good news, as new chips always mean lower prices for trailing-edge tech.

On the PC side, Intel announced its forthcoming P6, the successor to the Pentium (aka the P5). The new chip will perform up to three instructions per clock cycle vs. the Pentium's two by breaking up long x86 CISC instructions into small, fixed-length "uops" which it will handle using RISC-style tricks like out-of-order-execution. The chip will also have 256K of L2 cache built in. In plain English, that should make the P6 about twice as fast as a Pentium. A 130MHz version of the new chip should be out this fall; in the meantime, Intel's new 120MHz Pentium has already driven down prices on 90 and 100MHz models.

On the Mac side, Motorola and IBM are shipping two additions to the PowerPC family. The 603E is a low-power chip aimed mostly at laptops — but since it offers performance similar to the 601 and costs less, it will turn up in low-end desktops as well. The 604 is a new chip that Motorola says will be around 40% faster than a 601 of the same clock speed. Both these chips are expected to appear in new PowerMac models sometime this summer. The companies also have a 64-bit 620 model under development that should enable them to maintain their modest (10% or so) performance edge over Intel.

**The Death of DSP?** Apple struck the first blow when it abandoned the add-on 3210 digital signal processing (DSP) chip used in the 660AV and 840A, saying the PowerPC CPU could handle the whole job. Now Intel has jumped on the bandwagon, and thrown in an acronym, too: "Native Signal Processing" (NSP), that is, signal processing on the CPU.

Is this stuff really tough enough for pro-level direct-to-disk multi-track work? Josh Rosen of OSC, once a vocal skeptic of the no-DSP hype, changed his mind when he and his colleagues got a hacked version of Deck II to run 24 tracks of CD-quality 16-bit audio plus a QuickTime movie on a PowerMac 8100/80. With all the error-correction and other safety features engaged, this may get knocked down to only 16 tracks, but with CPU horsepower doubling about every 18 months, soon we'll all be able to afford the kind of 96-track studios that made the '70s what they are today.

**Compaq Lowers Pentium Prices.** Number one PC vendor Compaq responded to smaller vendors' price cuts by lowering prices and announcing its first under-\$2,000 Pentium: a modest 75MHz model with 8Mb RAM and a 400Mb hard drive. Since other vendors offer considerably beefier systems at that price point, Compaq is clearly depending on its reputation to draw customers. However, the company is not resting on its laurels: It's offering an array of new goodies to keep it near the top of corporate buy lists, such as integrated Ethernet and tools to let network administrators monitor, configure systems, and troubleshoot problems remotely across a LAN.

—Robert Lauriston

## Contacts

**Antex Electronics:** 16100 S. Figueroa St., Gardena, CA 90248. (310) 532-3092; fax (310) 532-8509.  
**Digidesign:** 1360 Willow Rd., Menlo Park, CA 94025. (415) 688-0600; fax (415) 327-0777.

**Doepfer (Ocean Midi-Musik-Systeme):** Engelsgrässchen 24, D-63075 Offenbach, Germany. (69) 86 23 33; fax (69) 86 42 68.

**Emagic:** (U.S.) Box 771, Nevada City, CA 95959. (916) 477-1051; fax (916) 477-1052. (Europe) Halstenbeker Weg 98a, D-25462 Rellinger, Germany. (04101) 4765-0; fax (04101) 4765-99.

**E-mu Systems:** 1600 Green Hills Rd., Box 660015, Scotts Valley, CA 95067-0015. (408) 438-1921; fax (408) 438-8612.

**Ensoniq:** 155 Great Valley Pkwy., Malvern, PA 19355. (610) 647-3930; fax (610) 647-8908.

**Eye & I Productions:** 30 Jungfrau Ct., Milpitas, CA 95035. (408) 945-0139; fax (408) 945-5712.

**Gallery Software:** (U.S.) InVision Interactive, 2445 Faber

Pl., Ste. 102, Palo Alto, CA 94303-3316. (415) 812-7380; fax (415) 812-7386. (Europe) 87 Redington Rd., Ste. A, Hampstead, London, England NW3 7RR. 44 171 431 6260; fax 44 141 435 8134.

**Generalmusic:** (U.S.) 1164 Tower Ln., Bensenville, IL 60106. (708) 766-8230; fax (708) 766-8281. (Europe) Via Del Rose 12, I-47048 S. Giovanni in Marignano (FO), Italy. (0541) 95 95 11; fax (0541) 95 74 04.

**Kid Nepro Productions:** 180 Bethel Loop, Brooklyn, NY 11239. (718) 642-7802; fax (718) 642-8385.

**Korg USA:** 89 Frost St., Westbury, NY 11590. (516) 333-9100; fax (516) 333-9108.

**Lexicon:** 100 Beaver St., Waltham, MA 02154. (617) 736-0300; fax (617) 891-0340.

**Musicator:** Box 16026, Oakland, CA 94610. (800) 551-4050; voice/fax (510) 251-2500.

**Musitek:** 410 Bryant Circle, Ste. K, Ojai, CA 93023. (805) 646-8051; fax (805) 646-8099.

**Opcode:** 3950 Fabian Way, Ste. 100, Palo Alto, CA 94303. (415) 856-3333; fax (415) 856-3332.

**OSC:** 480 Potrero Ave., San Francisco, CA 94110. (415) 252-0367; fax (415) 252-0560.

**Patchman Music:** 2043 Mars Ave., Lakewood, OH 44107. (216) 221-8887.

**Quasimidi:** Eisenbahnstrasse 13, D-35274 Kirchhain, Germany. (06422) 6712; fax (06422) 1735.

**SEK'D:** (U.S.) Soundspiration Systems, 9704 White Ash Rd., Dallas TX 75249. Voice/fax (214) 298-3472. (Europe) Zschertnitzer Strasse 41, 01219 Dresden, Germany. Voice/fax 0351 411 0546.

**Sydney Urshan Music:** Box 1007, Hollywood, CA 90078-1007. (800) 883-9332; fax (818) 901-9332.

**Technics:** 1 Panasonic Way TC-8, Secaucus, NJ 07094. (201) 392-6140; fax (201) 348-7954.

**Touched By Sound:** Industriestrasse 2, D-90765 Fürth-Bislohe, Germany. (0911) 301 011; fax (0911) 306 7228.



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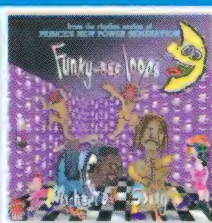
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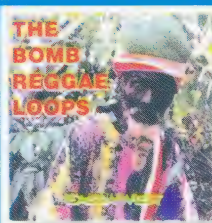
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From the rhythm section of Prince's 'New Power Generation' Michael Bland and Sonny Thompson comes a brand new collection of funky loops that blows away the competition. Over an hour of loops and breakdowns from the masters of funk. You've heard these guys play - need we say more!! (CD-ROM \$199.95)

★★★★★  
KEYBOARD REVIEW



## REGGAE LOOPS

NEW! from New York producer Jonathan Holmes - 'The Bomb Reggae Loops' features an incredible and authentic sounding variety of complete loops and breakdowns covering all styles of Reggae and Caribbean influenced grooves. REAL sounds played by REAL reggae musicians. BRILLIANTLY RECORDED

NEW

## XTC GOLDMINE 3

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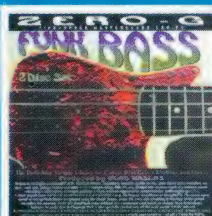
NEW

## BLACKBEAT

BLACKBEAT features New Jack Swing, Rap & Regga. If you like Black to Black you'll love this collection. Some of the composite loops are around a minute in length and evolve giving you numerous alternative loops to choose from. If you like the music of Teddy Riley, R. Kelly, Jam & Lewis, Babyface you'll love this. Available NOW!



NEW



## FUNK BASS

From the creator of Zero-G's Funk Guitar comes an even more amazing collection - this time a 2-CD set. CD-1 features a huge number of loops, divided into many sections. Where appropriate, loops are provided in up to 5 different keys AND each section is supported by multi-samples on CD 2 - funky bass loops!!

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KEYBOARD REVIEW



## VINDALOOPS

Zero-G 'Vindaloops' is a spicy concoction of Indian percussion loops, single shot hits and authentic Bhangra instrumentation and effects. We envisage these samples being used in the widest range of musical styles imaginable including Dance, Ambient and, of course, Bhangra. HOT OFF THE PRESS!!

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100 MINUTES!!! mostly stereo sounds + different monosamples on the left and right side - •750 Synths (chords, organs, voices, pads) •250 Bases •750 Drumloops (exactly tuned and sorted out in BPM-groups of 130 to 200 (Vol. 1 covers the slower beats) PLUS! 100's of classic analog drum machine sounds.



★★★★★  
KEYBOARD REVIEW

## ANALOG DREAMS

Another monstrous collection on 2-CDs OVER 3000 samples! Analogue Dreams is a comprehensive collection of hard to find classic synths and drum machines - Prophet 10, Matrix 12, Matrix 6, Synton Syrinx, Elka Rhapsody and Synthes, DB-8, Mini-700, Memorymoog, MKS-30, MKS-80, CS-80, and many more.



NEW

## RHYTHM OF LIFE 2

Second in the Rhythm Of Life series from AMG, Volume 2 comes from The Groove Gurus (Hollywood film composers Terry Emery + Greg Knowles). Included is a rich kaleidoscope of Ethnic Percussion Loops & Hits. Perfect for film composers/multimedia developers/dance producers. ATMOSPHERIC-ETHNIC-AMBIENT

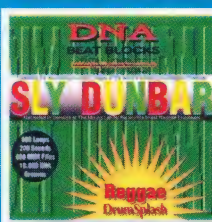


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KEYBOARD REVIEW



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HOT!



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## L.A. RIOT 3

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**NEW**

## PHAT & PHUNKY

From Rich Mendelson, the programmer of the five star rated sample CD Dance/Industrial 2 - Phat & Phunky includes over 2 hours of complete loops, the samples for each loop, and a disk containing all the sequence data for every loop!! on 2-CDs The material is R&B/Hip-Hop/Slo Jamz - suitable for any type of track.

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BUNDLE (BOTH TITLES)  
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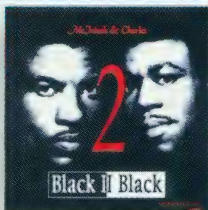


## NO SAMPLER REQUIRED!!

If you own a MAC or a PC, check this out! German Sound Developer Best Service has just released this breakthrough product that enables you to piece together finished tracks on your MAC or PC using only the 'CIRCLE ELEMENTS' software and enclosed CD-ROM - all for \$39.95! Each CIRCLE ELEMENTS CD-ROM includes 1000 sounds and loops from the Best Service Catalog - sounds that are already in professional use. You can build sound collages of any duration. The CIRCLE ELEMENTS workscreen is easy to use - you just need good ears and good taste!

## BLACK II BLACK 1&2

Black II Black is the biggest and best collection of kickin' R+B samples around! It features Kickin', Mid+Slo Jamz, Garage/House loops, Reggae loops, Stereo vocal blocks, Sax + Trumpet licks, Guitar licks, Bass lines, FX, Percussion loops, Rare snares, Ragga, Swing, Disco etc!! ALSO AVAILABLE VOL.1



**NEW**

## TEKNO/INDUSTRIAL

From Perry Geyer and Greg Hawkes, the programmers of the five star rated sample CD Technophobial - Tekno/Industrial includes over 500 'hard as nails' loops and samples, Drum loops, Kicks, Snaps, Sound Effects, Industrial Percussion Noises, Vocoder, Basses and Synths. AN ABSOLUTE SMASH!



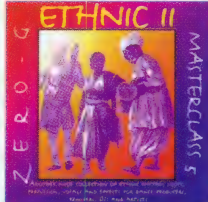
★★★★★  
**KEYBOARD REVIEW**



## GROOVE ACTIVATOR

NEW! from AMG - Gota Yashiki's (Simply Red, Soul II Soul, Bomb The Bass) 'Groove Activator' features specially recorded drum grooves from 70 BPM to 123 BPM, plus single hits of Kicks, Snaps, Fills, Toms, Hats, Cymbals and percussion. Gota's ability to make machines groove is legendary. (CD \$99.95)

**NEW**



**NEW**

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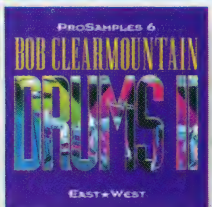
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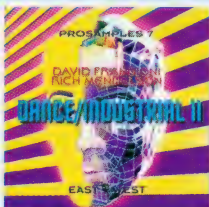
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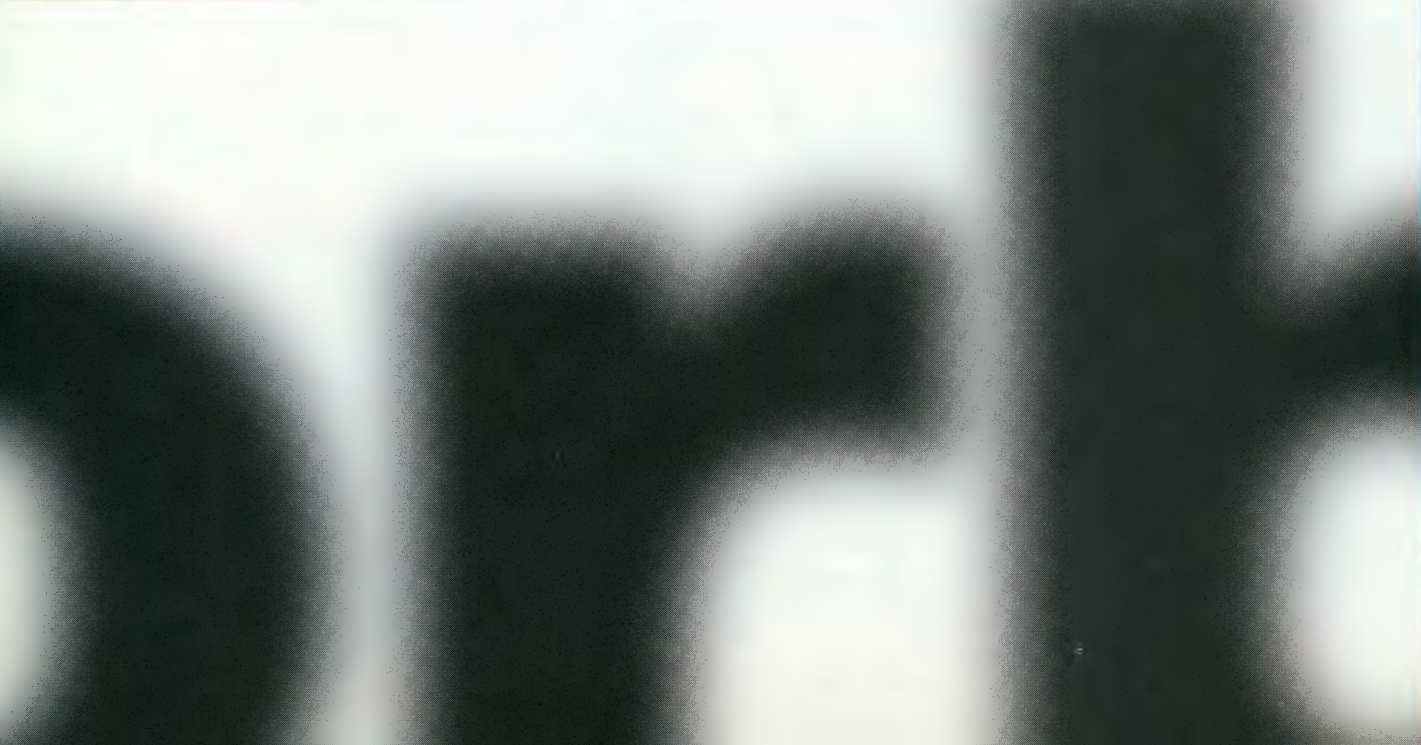
# INSIDE THE AMBIENT TECHNO ULTRAWORLD

If music is a response to the temper of our times, then the Orb is exactly what America needs. Things are getting a little too cut-and-dried here: Complex problems beget weirdly simple solutions — kicking people out of the country, putting them in institutions, shutting down institutions, or just saying no.

As the guiding force of the group known as the Orb, Alex Paterson sees things differently. His music is all blur and fuzz. Scraps of sound fade in and out, drifting over fields unbound by the barbed wire of verse and chorus. There's rhythm, and it's as regular as anything on the prosaic dance charts. But so are heartbeats regular, though life swirls through and around them with beguiling imprecision.

Shapes are hard to identify in Paterson's world. Voices fly about, sometimes as sharp and intrusive as a mosquito's whine, more often muffled and unintelligible; someone is talking, but we can't quite make it out. Occasionally the aural clouds lift and we hear something more clearly — something ugly or scary, a snake-handler's snarl, or fragile, a child's tale. We hold our breaths and listen, afraid of losing this picture of innocence as it sinks

BY **ROBERT L. DOERSCHUK**  
PHOTOGRAPHY **MITCH TOBIAS**







ALEX PATERSON



into a sea of reverb, the sound of a dream dissolved by the light of awakening.

There's a lot more going on here than ambience. Many of the artists tagged with the ambient label update the ideas pioneered by Brian Eno and, especially, Harold Budd. Through space and suggestion, they define a style that celebrates inertia, or even creates almost a sense of paralysis before a moment of beautiful oblivion. But there's an optimistic tinge to the Orb. It surfaces in the organ motif from "His Immortal Logness" on *Pomme Fritz*, a simple, roller-rinkish tune that seems drawn from some half-remembered childhood scene. It blossoms in synth parts that fan out over teeming noise pastiches. Even the prickly staccato synth and rhythm interludes in the *Live 93* version of "Blue Room" is more tickle than sting.

Then there's *Orbus Terrarum*, the latest Orb exercise. As noted in last month's review, Paterson combines a vivid timbral ear and improvisational sense to create an album of great organic power. One could imagine its pulses, spacey reveries, and fragmented monologs as a kind of interior soundtrack, a score for a ballet of brain and biology — an almost uniquely human document.

Not much of Paterson's style draws from pre-punk rock or the familiar electronic icons. Its energy is a streamlined variation on the ambient dance discs he spun as a DJ at Paul Oakenfold's club, Land of Oz. Its sense of movement stems from his experience as roadie and occasional performer with Killing Joke in late '79; the slow, unfolding pace owes much to Paterson's experience as an A&R staffer for Eno's E.G. label, beginning in the spring of '88.

In those days Paterson was working closely with Jimi Cauty, whose music was being published by E.G. Together they launched the Orb catalog in the summer of '88 with "Tripping on Sunshine," an experimental piece intended for use on ex-Killing Joke bassist Youth's *Eternity Project One* album. Other releases followed: They pressed and quickly sold 1,000 copies of a four-song EP built around samples recorded in 1981 from broadcasts of KISS radio in New York. In the spring of '89 they unleashed "A Huge Evergrowing Pulsating Brain that Rules from the Centre of the Ultraworld," a haunting meditation on a sample taken from the late Minnie Ripperton's "Loving You."

Several months later, Paterson and Youth collaborated on "Little Fluffy Clouds." With its thumping beat and spaghetti-western harmonica hook, it hit the charts hard. After Cauty left to work full-time with KLF, Thrash became Paterson's partner and helped lay the groundwork for the group's live debut in April '91.

Since then, the Orb has performed throughout the world, on occasion as post-punk quartet covering the Stooges' "No Fun" but often in more ambitious settings. From Glastonbury Plain to pre-dawn sets at Woodstock II, Paterson and assorted colleagues excel at live remixes that embrace and absorb the natural world into which they are released. After an Orb marathon, it doesn't really matter whether the crickets you're hearing are real, sampled, or in some strange place between.

We met with Paterson in L.A. Thrash had recently departed the Orb, leaving Paterson in charge. He was

putting a new lineup together, with plans to tour the U.K. from March 15 into April, with European dates following in May, American club gigs in June, Japan in July, and more concerts in Europe after that. As we spoke, the group consisted of Nick Burton, Simon Phillips, co-writer and producer Thomas Fehlmann, and Andy Hughes, engineer and, according to Paterson, designated sex symbol. We began by zeroing in on what American audiences can expect from this year's incarnation of the Orb.

**H**ow does the Orb's approach to performing differ from the approach taken by more traditional bands?

Everything is already on DAT, basically. We have a multitrack onstage, because we try and take the feel of the band in the studio onto the stage, rather than go onstage with instruments to copy what you've already heard. Technology has given us the freedom to buy three DAT machines for the cost of a thousand pounds, so in essence we've got a three- or four-track studio up there.

*Will there be any instruments onstage?*

I might have my ARP 2600, because that's what we used for the bass part on "White River Junction" [from *Orbus Terrarum*]. It's been, MIDled.

*You'll have a rack of modules as well?*

A rack of effects, mainly. Andy's got his rack of effects, and I put my effects through whatever I want to do with two turntables, three cassette machines, two CD players, and a couple of DAT machines. That creates quite a racket.

*Effects seem to play a key role in how you improvise in concert.*

Well, yeah. If you listen to an Orb record, there's never really an ending; it just leads to another record. You've got to change the DATs live, so if you just leave an effect running you can do that.

*You can do the same thing by using looped samples as transitional elements.*

Right. "God wants to love and use you": That's an example we've been using recently in our shows. That's a pretty phenomenal vocal, and we just leave it running in a loop. I've got my own Akai S1100 in my mixing desk; DJs are a little more technical than they used to be when they were just playing two records. I've got two ten-second samples I can use through a digital delay any time I need to stop the record. When we first started doing shows, we used to use just a DAT machine. But when I'd play it onstage, people would say, "That sounds so different tonight. What track did you play that in?" And we'd be playing the same DAT every night! We'd just be changing effects.

*The DAT, then, would include the basic rhythms and chords.*

In the old days, it would contain the whole track. In the new days, you can strip it all down to just the metronome. It depends on what you're trying to do. We're bringing real musicians into technology now, whereas we used to do it the other way 'round. The hardest thing we're doing right now is to get a bass player and a drummer who are open to what we're doing and can play in time with everything on the DAT.



Simon and Nick seem to be having problems trying to understand what the hell is going on. It's easy enough with technology to move something in 7/8 over something else in 4/4. But to get humans to do that is difficult.

*Depending on the people you hire.*

But, look, I'm not *hiring* these people. They're my friends. We're going to tour, which means we're going to be living together for a year. You can't *hire* people for that. That ain't gonna work. They'd end up in their own tour coach, wanting loads of money and not getting on with other people. It's very difficult to stay friends with people when you're on tour.

*Traditional bands improvise through solos. When you've got your DAT running on-stage, how do you improvise?*

I'll take some effects out. The engineer on the other side of the stage brings other effects in. Chris [Weston, a.k.a. Thrash] used to do that as our engineer, but then he decided he didn't want to engineer anymore; he wanted to concentrate on doing the music with me. Chris got to the point where it was very much like, "Well, if you're doing that with the music, I don't like it. I want to be doing this, and then I'll like it." It was pretty sad. He's left the band now. Nick, Simon, and Andy, as a live band, are very strong. Nick and Simon have been touring with us since 1992, and Andy has been in the studio as an engineer with us since just after *U.F.Orb*. He was the engineer on *FFWD* [available on the English label Inter]. He got himself more and more involved. Then Chris wanted to become the engineer again, and be the songwriter, and not have anybody else involved. I told him, in no uncertain terms, "Get your own band together. Sort your own life out." So he left in early August. At the end of the day, Chris might feel a bit grieved about leaving the band, but it was his decision.

*What kind of a role did he play in Orb concerts?*

Well, he stopped doing them two years ago. He didn't want to go on the road. Andy just got gradually involved, and a bit of antagonism was going on. So when Chris finally left, Andy just stepped into his shoes.

*What qualities does your current co-producer and co-writer, Thomas Fehlmann, have that let him play a major role in your creative process?*

He's a very dear friend. And he's got the same idea that I have, that music isn't just something to dispose of. We don't want to make disposable records. We're fed up with them. You pick up a Led Zeppelin record, you know exactly what you're gonna get. It's gonna be the same kind of integrity we'd like to have in putting the message across on an Orb record. We may have achieved that on the new album. At least we gave it

our best shot. But I think that, like a Led Zeppelin album, it sits on its own. The difference is that you kind of know what's going to happen on a Led Zeppelin record; on an Orb record, you don't. You hear something in one speaker, then you walk to another speaker in another corner of the room and it sounds completely different. But you don't know that until you get over to that speaker and listen to it three times. So it's really nothing like a Led Zeppelin record, except in that I've

got to have some kind of focus to make it not just, "Oh, I'll listen to that album and forget about it."

*Some of the strong beats on earlier Orb albums seem to reflect your punk roots. How did you evolve from that background to the position you assign to rhythm in your music today?*

I'll mention one band: Can. That's the easiest way to answer. He [i.e., Holger Czuyak] changed my

way of thinking in the sense of what he was up to. I admit I was a very late learner of Can ways. They were always hidden under the perception that Kraftwerk started up. Kraftwerk was an amazing band too, which leads me to the whole German feel of music in the early '70s. I mean, Stockhausen brings out the non-rhythm side of the music, but that same quality is still there. I sat down one night with Richard James, played some Stockhausen, and talked about it for half an hour.

*Which Stockhausen piece was it?*

The one that was made in 1959. I'm quite attracted to it because of the fact that it was made the year I was born.

*Your rhythm tracks create an almost ethnic feel, often through intricate patterns that avoid emphasizing the backbeat.*

That's true of the new album, but we've done music where it's much more obvious where that bass drum is gonna come down.

*How do you get that organic quality in your rhythm parts?*

That's from putting the noises through any outboard effect we might have handy. That makes them sound completely different. A bird noise can be turned into a cuckoo clock, as an example. We don't always do that kind of thing deliberately, but on *FFWD* we did — so deliberately that we called the track "What Time Is Clock"? We'll take raindrops and use them too. There was a hole in the roof of our studio, and every day it would rain. Every day we'd have to take all the gear out, then put it back in when the rain stopped and carry on recording. One night we decided to record all the raindrops. That turned into a rhythm pattern.

*When did you begin exploring beyond the ambient idea?*

## Discography

**Aubrey Mixes:** *The*

*Ultraworld Excursions*, Caroline.

*Live 93*, Island Red Label.

*The Orb's Adventures beyond the Ultraworld*, Big Life (dist. by Mercury). *Orbus Terrarum*, Island Red Label.

*Pomme Fritz*, Island Red Label.

*U.F. Orb*, Big Life.

## Concert Dates

**May 30:** The Masquerade, Atlanta, GA. **June 2:**

Venus de Milo, Boston, MA. **June 3:** Roseland, New York, NY. **June 4:**

The Trocadero, Philadelphia, PA. **June 6:**

venue t.b.a., Montreal, QU. **June 7:** venue t.b.a., Toronto, ON. **June 9:**

Phoenix Center, Detroit, MI. **June 10:** The Metro,

Chicago, IL. **June 12:** The Bomb Factory, Dallas, TX. **June 16:** Warfield

Theater, San Francisco, CA. **June 17:** The Shrine, Los Angeles, CA.



I was working with Jimi. We'd spent the weekend before programming these really shit drum sounds. I was rapidly going off the idea of using drums because I wanted to create a music you could play *after* the clubs, music that was modern but that you didn't have to dance to. The only way you could stop people from dancing was to take the bloody drums away. That night I went out to an amazing club or party, call it what you want, in a big tent near the sea. I ended up on the beach the next afternoon. Then Jimi and I went back and did "Loving You" [the Minnie Ripperton vocal sample used in "A Huge Evergrowing Pulsating Brain . . ." from

*Aubrey Mixes* and *Adventures beyond the Ultraworld*]. I was so chilled out by the fact that we'd spent the afternoon by the sea after doing this club all night that it was like, "We can take these drums out!" The ambient noises in there created the environment where we'd been that morning.

*Before launching the Orb, your involvement with music technology was minimal. You were a drum tech, for example, with Killing Joke.*

It's easy enough to say I was just a drum tech, but actually I was the only roadie they had. I ended up with the drums because that's what I enjoyed most: tuning drums,

playing around with drums, annoying people with drums. Still do. Besides, we were the first band ever to use [Clavia] ddrums. I was the first roadie who ever tried to put ddrums into a live kit, because the drummer looked like an idiot playing the stupid electronic stuff. He wanted them to look like the sound was coming out of a regular drum kit, which really pissed me off. I wasn't a bloody carpenter. Still, [Killing Joke drummer] Paul was very open to hearing me. If I wasn't getting the bass drum in time, he'd still hear what I was trying to do. When you listen to Can, you can hear what he was trying to do: loops that you can do in a computer now.

*Do you see what the Orb is doing as a bridge between, say, Stockhausen and more accessible styles?*

I know exactly what you mean, but if somebody reading this says, "Oh, I've got to buy that Stockhausen record because it must be really good," they're gonna get a cruel awakening.

*But you have no problem combining radically disparate influences in your music?*

That's right. It's like being a painter. You see something that you want to put in a picture. It becomes a collage rather than just a painting. Americans are very good at doing these things through society, picking up bits from Europe, from South America, from here and there. That's what we're doing at the musical level. I mean, I had the first Led Zeppelin album coming into my head when I was eight years old. So I've always thought, "I like John Bonham, I like Sly Dunbar, and I like Brian Eno. I wonder what that all sounds like together?" That's what the Orb is, even today.

*Did you ever go through a period of playing real-time music in bands?*

No, but I've always been surrounded by music. I had what I regard as a musical home. My brother was a really good musician. [Producer/Killing Joke bassist] Youth and I grew up together. We went to school together, shared flats until about four years ago. He was trying to teach me to play the bass guitar when I was 15 or 16, but I was more into basketball than music at that time; my fingers were always in bandages because I kept dislocating them. [Paterson holds up two somewhat twitchy ring fingers.] In fact, these two fingers still have their own minds. Forget it: If I'm playing keyboards, it's with my thumbs and index fingers. That's peculiar, but it's just one of those things.

*So sequencers and related developments in technology must have been the catalysts that let you begin making music as the Orb.*

Well, to be honest about it, the Orb at first was basically about taking lots of drugs

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and going clubbing. I had been trying to run my own label with Youth, but people were telling me that since I was also working in the A&R department at E.G. I should be more involved with the label that was paying me. Then Jimi and I decided that we should get a band together. I saw that as my lifeline because Jimi had a 16-track studio and his publishing company was E.G. So the people at E.G. said, "We'll turn a blind eye to you working with Jimi because if you come up with anything successful we'll publish it." They also turned a blind eye to me running a company with Youth, because Youth was signed to E.G. Publishing as well. So those were the breaks that took me into the realm of making music. The technology had been there, but I was a late developer.

*How did sampling affect your work?*

It really gave me my main purpose with the Orb: What can we do with this sample? What effect can we put into it? How can we hide the saxophone from *Blade Runner* and put that into a track that went into the Top 20 in Britain without anybody recognizing it? There's a kind of beauty, a kind of cleverness, in that: People will go, "What did I just hear? That ain't in there!" But it is! It's like taking the drums in "Little Fluffy Clouds" from a drum break that went on for about three minutes on an album by a very important singer who died recently. No one would even think of going into that type of music to find it in the first place.

*You rely a lot on spoken word samples to set moods and provide segues, though they're often mixed down to the point of inaudibility.*

That's true, although we didn't do that on the first album [*Adventures beyond the Ultraworld*], which was three weeks of hard work: Get the album out and keep it under budget. The new album is two years of blood, sweat, tears, and loads of money — more money than I ever would have imagined I could possibly get my hands on when I was younger. And getting the words in the right places.

*Where did that money go on this album that made it different from less lavishly funded Orb projects?*

Into our manager's pocket. Let's put it that way.

*Have you got a better manager now?*

I've got a caretaker manager, a close friend.

*How did you begin thinking of spoken word samples as devices that could enhance your music?*

Intuition. That's the only way I can put it. You've got to have some humor on these records, and words can put a smile on people's faces. In essence, I'm doing what a lot of journalists — dare I say? — want to do,

and that's to take the piss out of somebody. For example, "Spanish Castles in Space" [from *Aubrey Mixes*] has a sample I took from an album in Russian. This bloke was talking about what kinds of fishes he had in his fish tank. You can imagine the reaction this will get when you play it in Russia.

*Where do you find your speech samples?*

Mainly from the lovely TV and radio networks you've got here in this lovely country. I record two hours of DAT while sitting up in a hotel room, bored. Then I'll go home, put it in a sampler, and find the nice ones. It could be two hours of crap, but sometimes I'll find something great. Remember that sam-

ple on "Little Fluffy Clouds" — something about a morphine drip in someone's stomach? That comes from a religious program. That's just an example of this society you live in; we wouldn't have some evangelist punching somebody in the stomach and yelling, "See? No pain! No pain!" Pow!

*Fundamentalist religious diatribes are familiar material for samples these days.*

Yeah, but we got in trouble once for using something from the Koran. We were using samples of passages from the Koran on one tour, and we were told, "If you don't stop, we're gonna declare a *fatwah* and destroy every gig you play." In fact, when we



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## the orb

were playing this record onstage in Brighton, these guys started trying to strangle our tour manager. I was putting the Koran over the top of, I think, "Outlands" when this message came up on my mixer: "Take the Arab record off. Now!" I thought someone was joking. Then I saw these three Arabs holding my tour manager up in the air and screaming at him.

*What about bird chirps and other real-world samples? Do you get many of them from third-party sources?*

I used to. Not now. It's an excuse to get away.

*So if we hear a train on an Orb record, it's not taken from a sound effects CD?*

Certainly not trains. There's a very big train line just 300 yards from my house. At about three in the morning this huge train comes running through, so there's this really low rumble going on. One night I left a DAT on outside my bedroom and got it on tape. It's also got the sound of some kids talking about whatever they could possibly think up. I have all of it on this two- or three-hour DAT, and I play it live at gigs.

*What purpose does Orb music serve? Is it entertainment? Is it a kind of commentary on our world?*

It's just something to chill out with at the end of the day. It's nice to know that people can cuddle up, kiss each other, and make themselves at home listening to the Orb. It's not like, "Right, I'm gonna get into the Orb and go for it tonight!" It's a much more personal experience than that.

*In that sense, do you see the Orb as playing a major role in defining ambient music?*

Look, we're not making ourselves to be the "guardians of ambience." We're not throwing down this gauntlet and saying we're the best band in the world. We're just doing our own thing and creating what we want to create. I like to think there's someone out there making music in the '90s that I can enjoy, just like I enjoyed sitting at home and having a listen to Can records. But if there isn't, I'll do that music myself. ■

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The **SX** is a full-blown music workstation style keyboard, using the same "engine" as the award-winning S Series Turbo MusicProcessor, with all the things the MusicProcessor is famous for: hundreds of huge, fat sounds with 32-voice polyphony, a powerful 250,000 event 16-track sequencer (no that is not a typo, 250,000 events), dual digital effects processors, and a 3.5" disk drive. But that is only the beginning.

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**Sections/Split:** 16 sections available real-time/16 Split/Layers



**Keyboard:** Lightly-weighted Action with Velocity and Aftertouch

Basically, this whole ad is trying to tell you that Generalmusic's **SX** keyboard is much better than the Korg i3. In case you still don't get it, here are the precise reasons why.

	Generalmusic SX2	Korg i3
SOUNDS	376 ROM+1672 RAM	256
SEQUENCER	250,000	40,000
SEQUENCER RESOLUTION	192 ppq	96 ppq
BATTERY-BACKED SEQ. RAM	Yes	No
RECORD TEMPO CHANGES	Yes	No
LOAD WHILE PLAYING	Yes	No
STYLES	96	48
STORE USER STYLES	32 + 32 Variations	4
USER PRGMABLE DRUMKITS	Unlimited	2
LYRIC / SCORE	Yes	No
VIDEO OUTPUT	Yes (option)	No
LOAD NEW SAMPLES	Yes (2MB option)	No
PRICE	Less	More



## Generalmusic's New SX Multimedia Workstation

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**Imagine**, without using any complicated computer software, pressing a single button and seeing any sequencer track instantly displayed as a musical score. Plus, the unique **SX** "preload" feature allows you to load new sounds and sequences while playing. The **SX** can be expanded with 2MB of optional sample RAM, which allows you to load in your favorite digital samples from choirs, to guitars, to applause. And, the optional video interface provides the connection to most televisions or computer monitors, which allows you to share your lyrics, music, or both with other people, turning your every performance into a multimedia event. For even more versatility the **SX** is available in two keyboard versions.

The **SX2** is 61-note keyboard, while the **SX3** has the expanded 76-note keyboard, both with lightly-weighted actions.

The new **SX** from Generalmusic is possibly more keyboard than you ever imagined. Way better, way cool, lots of fun, and for a lot less money than you might think. Visit your Generalmusic dealer today or contact Generalmusic Corporation for more information and the dealer closest to you.



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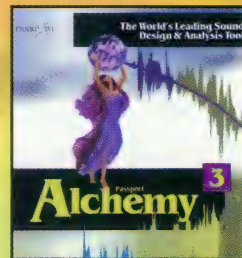
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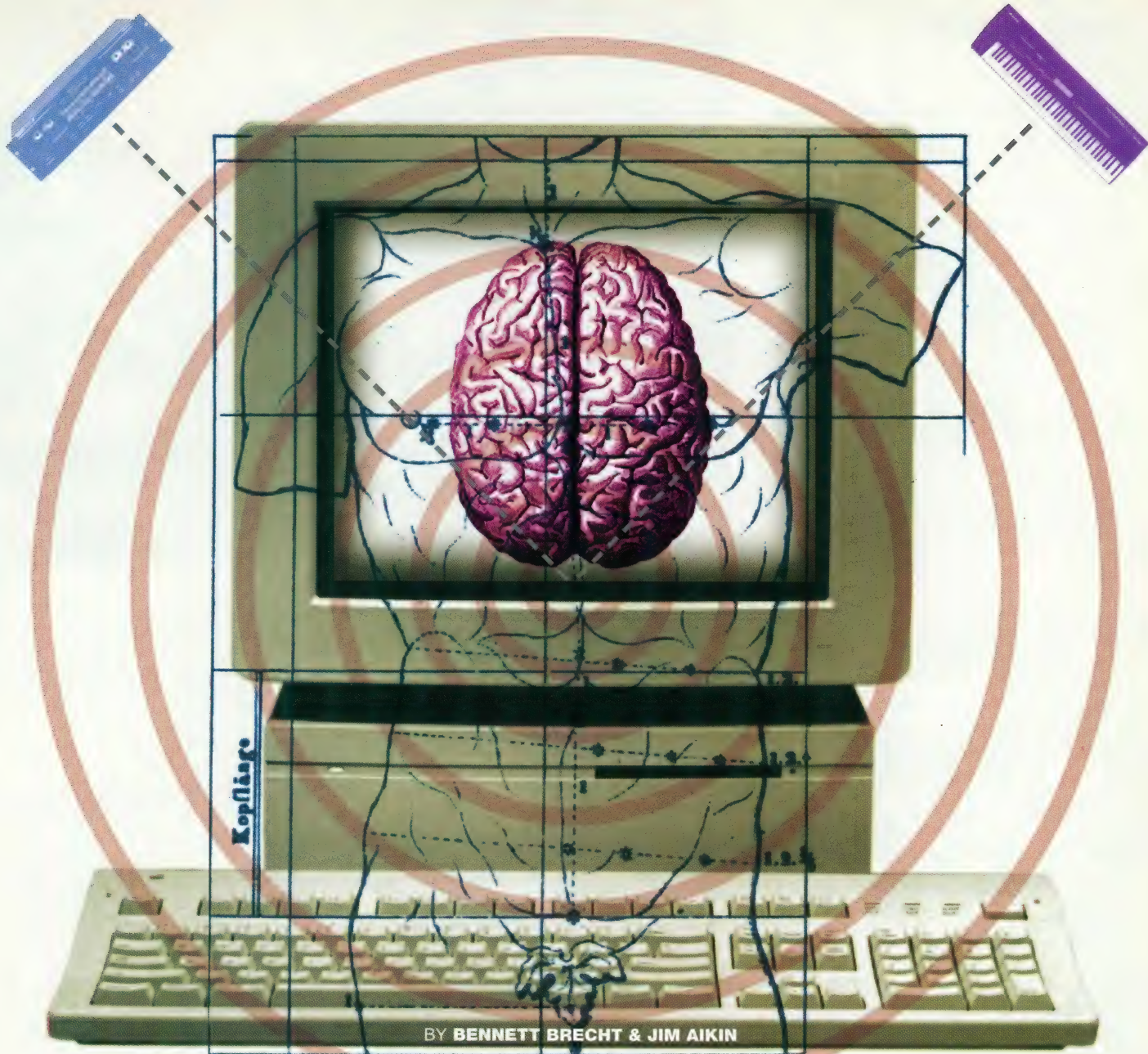


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# a lot of nerve

## Introducing Neural Network Computing: A Powerful Resource for Intelligent Accompaniment, Additive Synthesis Control, Real-Time Gesture Mapping, and a Whole Lot More

Ever since computers first began to be used for making music, we've been told that the computer works in a rigid logical way: yes/no, 1/0, true/false. All of those fuzzy intuitive ideas that we humans use for making music have to be quantified in some cast-iron form so that the computer can deal with them.

Now it turns out that wasn't quite true. Sort of, but not exactly. And if you notice how odd it is to say, "Sort of, but not exactly," with reference to computing, you'll have a glimpse of how radically

the new wave of computer science has changed direction. Machines using *neural networks* and *fuzzy logic* are on the horizon. Fuzzy logic? Sounds confusing, maybe even dangerous. Like, how confused do you want your computer to be? But these new computational techniques offer enormous advantages — maybe especially in fields like music, which are naturally fuzzy.

Imagine a drum machine with a bank of style sliders. One slider is for hard rock drumming, another for funk, another for African ►



polyrhythms, and so on. As you move the sliders up and down, the machine blends, or “morphs,” one style into another, or layers several of them into an aggregate style that’s never been heard before. Jerk several sliders quickly, and the machine might take a few bars to make a smooth musical transition from one type of drumming to another. This isn’t a fantasy; it’s the Global Drummer, a project developed by David Brubeck (not the jazz pianist), Christine Clements, and Nate McNamara, all of them graduate students at U.C. Berkeley’s Center for New Music and Audio Technologies (CNMAT).

The Global Drummer was programmed using a neural network. Traditional computing, the type now used in all home computers, synthesizers, and so on, is called hard or *crisp* computing, because the program executes step by step, line by line, like a glorified adding machine. Neural nets, while they run on the same computers, use a different conceptual model. They’re structured more like the human brain. Small modules (essentially artificial brain cells) are interconnected by “threads” that carry data. Just as in the brain, the action of these threads can either strengthen or weaken the activity of the receiving module.

By structuring a neural net for the type of activity you want, and then exposing it to the right inputs, you can actually teach or train it to perform a specific task in an intelligent manner. In essence, we can now teach a computer through repetition, and watch it get smarter, faster, and more efficient.

It’s the network as a whole that learns. Working together, the modules can recognize gestures and respond not only with flexible motor skills but by predicting what direction the input is likely to go in the near future. When processing a rapidly changing input, a well-programmed network can actually appear to have something resembling human intuition.

Let’s illustrate the idea with a simple example: Instead of building a calculator that will work out the sum of  $1 + 2$  and produce an output of 3, we can build a network that will know automatically, by *pattern recognition*, that  $1 + 2$  is always 3, without performing an addition process. (In fact, it would arrive at this result through a number of additions and multiplications, so a neural network would be an inefficient choice for a pocket calculator. We’re using this simple addition problem purely for purposes of illustration.) Once the net has absorbed the knowledge that  $1 + 2 = 3$ , it will always retain it, unless we later teach it that  $1 + 2$  equals something else.

Here’s where the fuzzy part comes in: If we teach a net that  $1 + 1 = 2$ , and that  $1 + 3 = 4$ , it can then *estimate* that  $1 + 2 = 3$ . It thinks of 3 as being “halfway between 2 and 4.” It can arrive at a new and appropriate result, given a set of inputs that it was never explicitly taught.

This sort of skill makes some traditional programmers and engineers nervous. Should we rely on a machine to make estimates? Can neural nets be trusted? Relax: Before they’re installed in your car’s anti-lock brakes, there will be a lot more testing and refinement. American cor-



David Wessel, director of U.C. Berkeley's Center for New Music and Audio Technologies (CNMAT).

porations have been reluctant so far to use fuzzy logic devices, perhaps out of fear of lawsuits — imagine the field day lawyers would have with a device in which the input was not explicitly wired to a guaranteed output! But they’re being used in Japanese consumer products already. For instance, a neural network can “learn” how much laundry you usually put in the washer, and how dirty it is, and use only as much water and detergent as are really needed.

The musical applications are a lot more interesting. The arithmetic example above is called *interpolation*, a smooth transition between two known values. This is also called *morphing*. Nets are especially well suited to morphing between two states — for example, between two discrete wavesamples. As DSP (digital signal processing) becomes faster and cheaper, we’ll probably start to see synthesizers with neural nets that can actually morph between one sample and another in real time, not using a filter bank on a single sample as in the E-mu Morphpheus, but actually altering the wave data in an intelligent way.

Neural nets offer many other possibilities. Imagine having a software “assistant” who, over time, could learn your style of jazz soloing. You could play duets with this assistant, either on-stage or during practice sessions in order to refine your style. If you present new circumstances to the net (a different set of chord changes, for example), it could produce a new and original estimation of the appropriate output while maintaining your own style. This concept can be further expanded by feeding the new outputs back into the net, with positive or negative reinforcement from you (“more of this, less of that”) for retraining. You would wind up with a finely tuned assistant that’s closely in sync with your own methods and intentions.

Because they can predict the future by recognizing typical input patterns and anticipating what’s most likely to happen next, nets are also a good choice for building a program that will

follow a conductor’s baton. The net can be fed an output from, for instance, a Buchla Lightning infrared wand sensing system. You train the net by showing it the up-and-down gestures used by a particular conductor, and teach it that the beat is at the top or bottom of the movement, when the wand changes direction. As the conductor’s arm speeds up or slows down, the net will observe the change in wand velocity *before* the next beat arrives. It can then speed up or slow down its output (MIDI clocks, for example) accordingly. Similar results can be achieved, in this particular case, using simple averaging techniques rather than a neural network, but a properly programmed net will usually respond more gracefully and “musically,” with less tendency to spit out clumps of notes if the conductor speeds up suddenly or leave gaps if the wand motion slows down.

At Dartmouth, Dr. Jamshed Bharucha has developed a “listening” net that is able to identify chords. His research involves training a net to understand how to separate simultaneously sounding notes. Humans are able to detect notes in a chord by sorting out the hundreds of individual frequencies presented to the ear and assigning them to individual pitches. Our ears perform this activity automatically, unconsciously, and with great precision, but it’s not easy to teach a computer to do the job. Bharucha’s network sorts the input into stable frequencies and inharmonic sounds (noise). The pitches are then identified by another net as belonging to particular chords. This program is really a two-stage network; it models both human hearing and the cognitive parsing of chords that takes place at a higher level in the brain.

Another project, developed by Fred Hillerman in a computer music programming class at CNMAT, is a “listening neuro-drummer.” This program can listen to a stream of percussion playing (potentially even from live audio, if it’s provided with the necessary input) and estimate both the meter and the tempo of the music by



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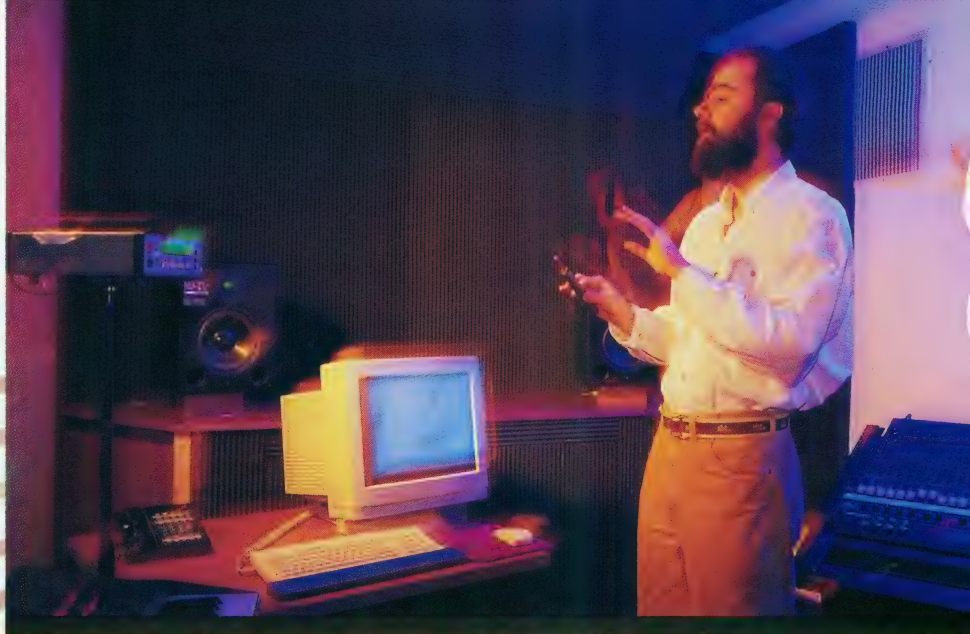


tracking the stress patterns. This information can then be passed to a second neural network, which uses the input to reprogram an appropriate drum rhythm. This rhythm, which appears at the output, could be in the form of MIDI notes. Ultimately, such a device might be developed into a live percussion accompanist capable of tracking and responding to changes in an ensemble's groove.

The network programming class at CNMAT is taught using Macintosh computers running Opcode Max, a graphic programming language. Working at CNMAT, Michael Lee has developed a neural network "object" (software module) called MaxNet, which integrates with the rest of Max. While most often used for MIDI programming, Max is capable of accepting real-time inputs and generating real-time outputs in many different forms, making it an excellent platform on which to experiment with network programming.

The MaxNet object can accept an arbitrary number of data inputs and generate an arbitrary number of outputs, all of them floating-point numbers between 0 and 1 (for example, 0.4665). To use it, you show it various sets of input values and "teach" it what set of outputs to produce for each set of inputs that you specify. Assuming that you choose the inputs carefully, it will be able to interpolate successfully between them, generating a useful stream of outputs.

Working with CNMAT director David Wessel, Georg Hajdu and Seth Ober have developed a program that can generate melodies that morph



Guy Garnett of CNMAT conducts the computer using an infrared wand.

between key areas. By moving the mouse around the screen in a "harmonic space," you can hear melodies that modulate. This is done by giving the various notes of the scale "weights" that determine the probability that any given note will sound. As the mouse is moved, the weights shift smoothly, so that it's hard to tell where one key ends and another begins.

"It's important that you use some intelligence in training the network," David Wessel notes. "When you mix colors of pigment together, you

can end up with brown. Likewise, if you're mixing styles of drumming, certain mixtures can be pretty non-descript." For instance, if you teach a network two different syncopated hi-hat rhythms, a "blend" of the two could easily be a continuous stream of sixteenth-notes.

At the University of Colorado at Boulder, network developer Michael Mozer has created a set of neural nets trained on examples of melodies from J. S. Bach and other pre-Classical repertoire. His program creates pleasing original

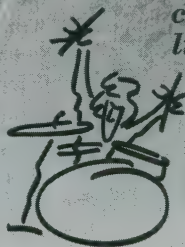
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melodies based on "rules" of composition that it was never explicitly taught. While this project is not yet a fully functional composer aware of larger structures, it shows that nets have considerable potential as collaborators in the compositional process. Eventually we may see integrated programs in which you can teach one network "module" your preferences in chord progressions, another your taste in melody writing, and a third your favorite arrangement techniques, after which you can press a button that will cause the three networks to collaborate on an original MIDI sequence file that closely approximates your style.

As synthesizers become more powerful, programming them becomes more a business for **experts rather than individual musicians**. Neural networks are a tool that may let musicians stay in better control of their instruments. Nowhere is this power more important than in additive synthesis. Wessel explains: "In an additive synthesis algorithm, you might have a hundred partials that are being blended into the tone. You want to control the frequencies and amplitudes of those partials using a very few dimensions of control. You can't actually sit there and manipulate a hundred variables very effectively in a meaningful way — especially not in live performance." By using a neural network to map a high-level parameter such as "bite" or "growl" onto a complex change in the parameters of additive synthesis, the synth designer could allow the end user to program the instrument without the tedium of specifying dozens of minute changes in parameter values.

In addition to using a neural network as a front end for synthesizer programming, you might use one to translate performance gestures into timbral changes. How might this work in the real world? Wessel elaborates: "Let's say you've developed a glove controller. You have perhaps ten variables coming off of the hand, depending on its position, rotation, and so on, and you want to map those ten values onto 30 variables that control the synthesis. You'd actually put the hand in the various positions that you want to specify, and then you'd tell the computer, 'In this position, I want to produce this result.' You'd adjust the synthesis parameters to be what you want. Then you put the hand in a new position and adjust the synthesis parameters to be what you want for that position. You do that for many different positions, and you give the network many examples of that sort. Then you turn the training algorithm loose, and if you've done your work carefully and been somewhat systematic — you have to think a little bit before you do it, you can't do totally arbitrary things — then when the hand controller is in an in-between position, the network will produce in-between sounds on the synthesis side."

In effect, the network will create and then apply ten simultaneous topographic maps of hills and valleys, where the separately defined hand positions specify the peaks and valleys. As you move the glove controller in performance, you might be moving down a slope with reference to one variable, and up a slope with reference to another variable at the same time. The network understands not only how individual variables

are to be adjusted, but something about how the variables correlate with one another.

A network can provide subtle advantages that go beyond smooth transitions. "Imagine that you want to control a Yamaha VL1 with this," Wessel suggests. "A nonlinear system like that [i.e., a physical model] can go into chaos. There's a lot of work going on now on neural network control of nonlinear dynamic systems. The network can manage to keep them in stable regions, or manage to keep them on the edge of chaos, where the sound might be interesting, but also keep them from going into total madness."

Wessel foresees the day when neural networks will be readily available on inexpensive computer chips. "Most of the computation with networks

just involves a lot of matrix multiplication, which can be implemented on dedicated vector processors. Vector computation is used in a lot of other things in the entertainment world as well, and it's a technology that's perfect for neural networks. Here at U.C., a chip design group under the direction of John Wawrzynek is developing a low-cost vector microprocessor that has the potential of being able to put a lot of computational horsepower into inexpensive products."

So now you may be thinking, with neural networks, will all those nightmare predictions about musicians being replaced by computers finally come true? Can we build a virtual musician whose output is indistinguishable from human playing? Not quite yet. In fact, that day



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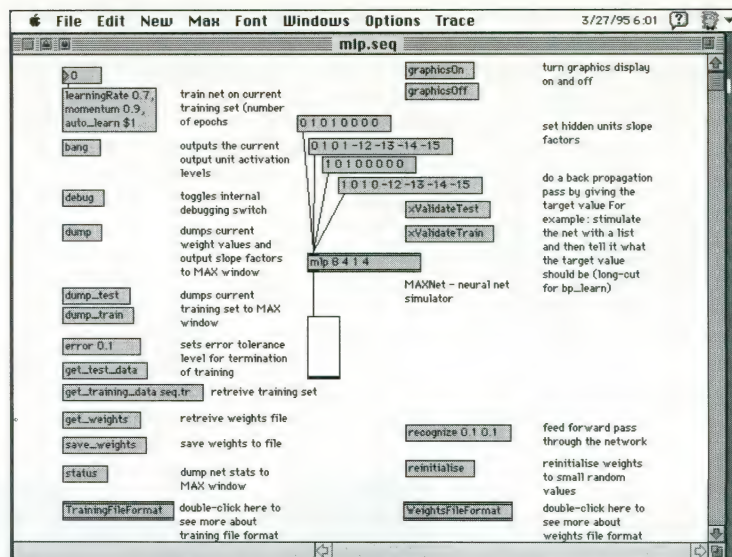


may never come. Humans have the unique ability to recombine a lifetime of musical memories in new and creative ways. This could never be accomplished by neural networks, which need carefully calibrated, context-related input in order to function properly. It's humans who have to prepare this input by deciding what is or isn't musically significant for a particular purpose.

The strength of nets is that they can aid the music production process and provide solutions to specific problems posed by conventional computing and logical design. Yes, we're leaving decisions up to machines, but the machines will make decisions only within the range that we allow.

Some very intelligent software-based musical assistants are on the horizon, though — machines capable of a variety of performance skills. They could be used not only for composing, concert music, and synthesis but in music education. "Smart" tutoring keyboards that can spot mistakes while adapting to a student's slow tempo, or listen to wind and stringed instrument performances and analyze the student's tone and intonation, might help fill the gap caused by budget shortfalls in school music programs.

While those applications would have to be designed by experts, neural network programming in the MIDI domain is available today, thanks to Max and the MaxNet object. Anybody who has the patience to learn a few new concepts can experiment with nets. Every year,



If you were programming a neural network using the MaxNet object in Opcode's Max graphic programming environment (Mac), your screen would look a lot like this.

"computer music" is less the exclusive province of a few experts in lab coats; there has never been a better time to discover for yourself the worlds that can unfold when you design a versatile real-time music machine that responds to your own input. ■

Thanks to Mike Mozer at the University of Colorado, Peter Todd at the University of Denver, Atsu Tanaka at IRCAM (Paris), Jamshed Bharucha at Dartmouth College,

David Wessel, Michael Lee, Adrian Freed, and Guy Garnett at CNMAT (U.C. Berkeley), as well as David Brubeck at the Computer Science Department at Berkeley.

Bennett Brecht is a composer and researcher/graduate of the University of California at Berkeley at the Center for New Music and Audio Technologies (CNMAT). He currently resides in New Orleans, where he continues his research and musical endeavors, as well as sculpting and painting.

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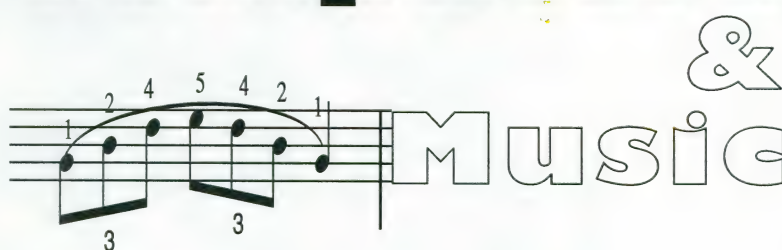
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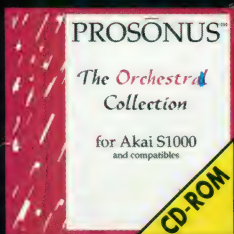
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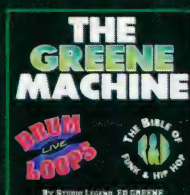
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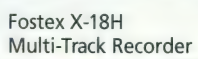
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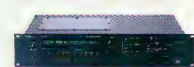
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70-1287



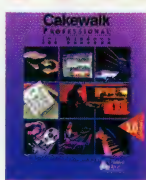
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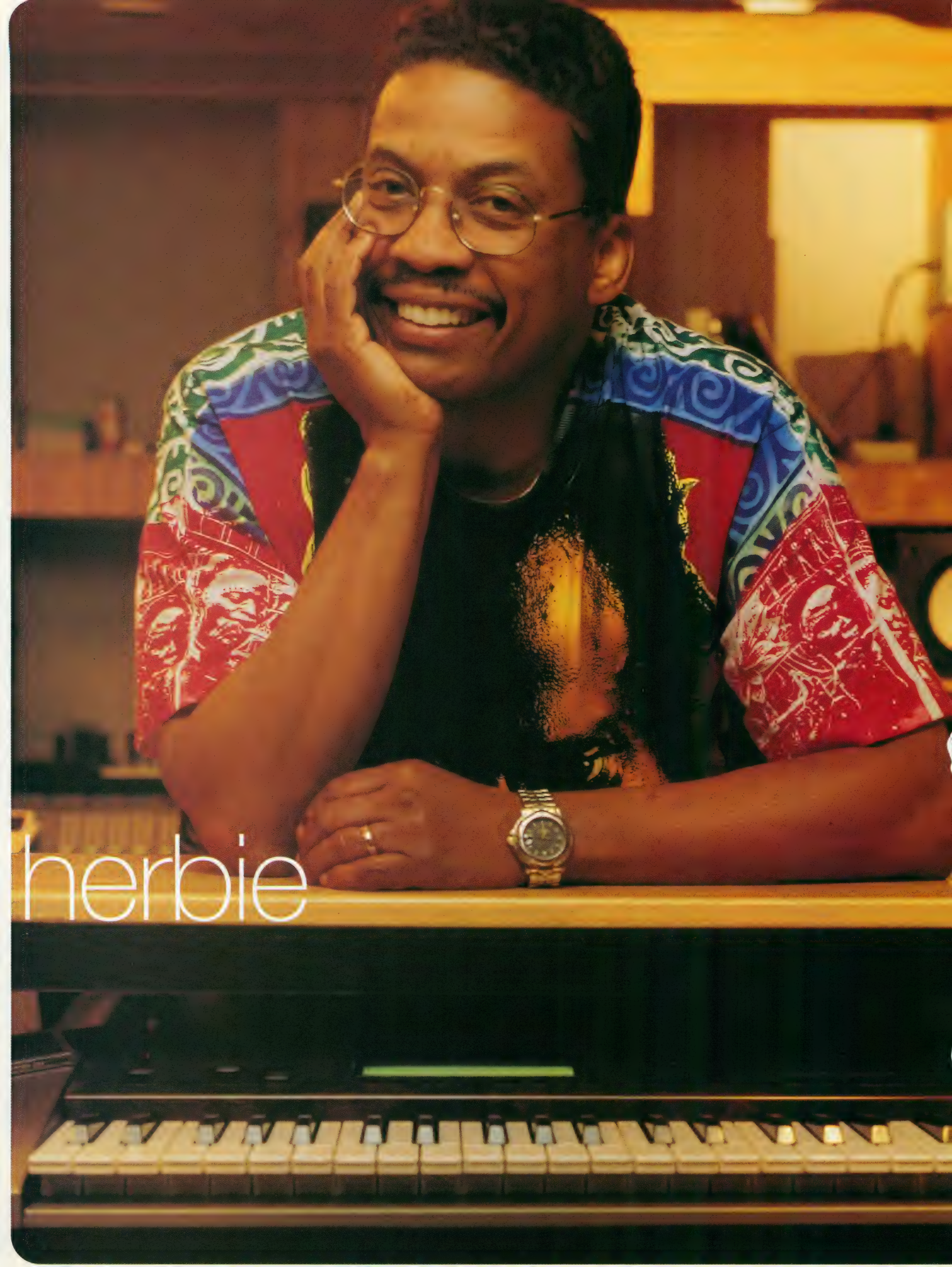
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herbie



**All you need to know about Herbie Hancock** lies before you in his Beverly Hills house. One side is comfortably elegant: a warm Oriental carpet on the hardwood floor, a fireplace, a nine-foot Steinway on which photos of Hancock with friends, family, and celebrities crowd against an Oscar and several Grammys. The other side is sleek, all business, with computers humming in an upstairs office and a fully stocked studio in the basement. A single room divides these two worlds; here stands the shrine before which Hancock practices his Nicherin Shoshu Buddhist devotions.

Lincoln's line about a house divided against itself doesn't apply here. The living room alone includes a Campanile surrealist painting, two stunning life-size sculptures of African villagers, masks, tasselled floor lamps, kitschy ceramic pigs, pictures of Hancock with Presidents Bush and Clinton — things that shouldn't go together, yet somehow do.

So it is with his music. For more than three decades Hancock has been playing things that some people said he had no business playing. By hopscotching genres, he dares listeners to open their ears and reconsider their musical preconceptions. It started in high school, when a fellow student's jazz performance sidetracked Hancock from a classical piano regimen and steered him into riskier territory. It continues today, with *Dis Is Da Drum*, whose hip-hop and neo-African flavorings pour dimension and imagination into the acid jazz mix.

While this formula isn't exactly unprecedented, there was a time when it took guts for a musician of Hancock's stature to explore areas that many jazz artists considered beneath them. The harmonic and improvisatory skills he displayed on his early work seemed incompatible with R&B, rock, and dance music. Few would have guessed that vocodered vocals, sequenced beats, synth lead lines, or turntable scratches lined his future path.

Hancock's explorations, nurtured by an apprenticeship with Miles Davis, stemmed from the radical assumption that there is something to learn from all music — and specifically from music abhorred by jazz snobs. By absorbing Sly Stone and James Brown grooves into his rhythmic framework, Hancock freed himself from the restraints others would have imposed on him. More importantly, he dignified the idioms from which he drew. His epochal fusion album *Head Hunters* clued rock and jazz artists to the new rules: All borders are suspect. And every musician, no matter what style, potentially has something to say.

Freedom is the key. As far back as 1965, Hancock put it this way in a *Downbeat* interview: "I'd like to consider myself a free player. By freedom I mean I'd like to be able to play the music of my moods. If I want to play R&B all night, I'm still a free player. If I want to play R&B for one number and the next number play on the strings of the piano, or even if I'm playing bebop all night, I'm still a free player."

For forging a true synthesis of jazz and R&B, down to fresh approaches to voicing, comping, and soloing, Hancock merits a place in our list of 12 Who Count. Beyond that, for basing his life as well as his music on a willingness to test limits and learn at every level of experience and reflection, he gets extra points (and a place on this month's cover) too.

The signs were there at the beginning: As an infant on Chicago's South Side, Hancock would stop crying whenever he heard music. His middle-class parents recognized his talent and began encouraging him to listen



In each issue throughout our 20th anniversary year, Keyboard will profile an artist whose work has strongly affected the way we make our music. This month we pay tribute to Herbie Hancock, who made rock respectable for jazz players (and vice-versa).

# hancock

from miles davis to interactive media  
(and everything in between)

BY ROBERT L. DOERSCHUK  
PHOTOGRAPHY VERN EVANS



to opera. At the age of seven, partly to emulate a friend of his, Hancock began taking piano lessons. From the start he seemed destined for a classical career: By the age of 11 he was featured with the Chicago Symphony Orchestra in a performance of Mozart's *Concerto in D*.

But already Hancock was curious about the music being played on the other side of the tracks. A chance encounter with a recording of "Moonlight in Vermont" on the radio marked his first contact with jazz. Rather than dismiss the experience or withdraw into a classical cocoon, Hancock learned how to understand this new music. Initially intrigued by George Shearing's harmonies, he moved through Dave Brubeck and other West Coast players into the work of Oscar Peterson and the hard bop school, transcribing and absorbing all the way. Lessons with Walter Dyett, whose previous pupils included Gene Ammons and Sonny Stitt, helped move his grasp of jazz from his head into his hands.

Though he entered Grinnell College in 1956 to study electrical engineering, Hancock soon switched to a major in music composition and organized his own 17-piece ensemble. He left school just one credit short of a degree to work the clubs back in Chicago; here he played with visiting jazz giants, one of whom, trumpeter Donald Byrd, hired him as his full-time pianist and took him to New York. Hancock was then 20 years old.

Byrd helped his young friend and roommate pick up session work with J. J. Johnson, Mongo Santamaria, Oliver Nelson, and other heavyweights. He also introduced him to electronic music; after hearing Stockhausen's *Gesang der Junglinge*, Hancock found himself drawn to yet another new discipline. In short order he was tuning into Elliott Carter, John Cage, and Edgard Varèse, and finding ways to absorb their ideas into his work.

Hancock released his debut album, *Takin' Off*, in 1963. Even then, he had to deal with people who felt that he was too interested in styles that were beneath the dignity of artists at his level of sophistication, people who couldn't comprehend — or were threatened by — the fact that someone capable of composing "Maiden Voyage" could also draw from street vendor cries and do funky variations on the blues in "Watermelon Man." That same year, he found a kindred soul in Miles Davis, whose band included Hancock from June '63 through 1968.

During sessions for *Miles in the Sky*, Hancock played a Rhodes electric piano for the first time. What seemed like a gimmick to some was an epiphany of sort for Hancock, whose light touch and rich voicings adapted effectively to the instrument's action and timbres. Over the next few years he led the way into the brave world of new keyboard technology, using a Hohner D-6 Clavinet and pedal effects on *Sextant*, an ARP Odyssey and Pro-Soloist on *Head Hunters*, and an ARP 2600 and String Ensemble on *Spank-A-Lee*.

Hancock's evolution can only be traced in lines that overlap, run parallel, sometimes collide, and often zoom past the boundaries of pop performance practice. With help from Patrick Gleeson, he began investigating the technical and musical possibilities of the synthesizer on *Crossings* in 1972.



**"[Technology] has got to be democratized. It can't just be that all the white people and the rich blacks have computers."**

More than a decade later he teamed with world music producers Bill Laswell and Michael Beinhorn on "Rockit," an unprecedented blend of rock, jazz, and rap, complete with turntable scratches. He took part in experimental sessions with Sam Rivers and trombonist Grachan Moncur, opened for Iron Butterfly on a stage perfumed by incense, tried his hand at playing organ behind vibraphonists Bobby Hutcherson and Dave Pike, warbled on vocoder in *Sunlight*, sought common ground with Gambian kora master Jali Foday Musa on *Village Life*. Yet he also played Bartók duos with Chick Corea, produced Wynton Marsalis's first album, and tore through standards with the acoustic V.S.O.P. quintet. He scored *Death Wish*, *Blow-Up*, and commercials for Standard Oil and Chevrolet. And now, with *Dis Is Da Drum*, the lines grow longer, the picture broader still.

We found Hancock behind the Mac in his studio, tracking down bootleg albums released in his name. "Look here," he said, pointing to the screen. "This one was recorded at a Tokyo concert. Why don't you order a copy and review it?"

Why not indeed? Anything is possible. Just ask Herbie Hancock.

**A**s someone who's been getting e-mail since the early '80s, you're obviously right at home at the computer.

I love computers. I've been doing things with them for years. Now I'm getting into multimedia. I have an audio/video company, Hancock And Joe Productions. We started off doing educational videos. Our main product was called *Singing with Seth*. Seth Riggs is the vocal coach for Stevie Wonder, Michael Jackson, Julio Iglesias, Madonna, Luther Vandross, Natalie Cole, James Ingram, a bunch of Metropolitan Opera stars, a ton of other people. He's the number one person in that business. So we have this 90-minute video of him teaching. My partner edited it in a way that was cognizant of its application as an interactive medium.

*It's on CD-ROM or CD-I?*

Not yet, but it was edited in a way that we think will make it easy to port over to those formats. I played a little bit on it at the beginning where I introduce myself. I'm sort of the MC.

*You're obviously on the Internet.*

Yeah. My address is herbieh@primenet.com. Right now I'm looking for money to do an interactive discography on the Internet. I'm definitely going to do a home page too, although I don't have it yet.

*This home page will include news of your recent activities?*

Yeah, and what other people are doing.

*Demos for prospective clients?*

Sure. Who knows? I might be able to sell some records, or even start my own record company. I'm really interested in the use of technology to speed up the production process so that it doesn't drag down the creative process.

*For example?*

Let's take the example of MediaPark. Pac Bell put this program together.



It's used by about 32 companies that have to do with the production of multimedia products: companies that put out CD-ROMs, companies that do post-production, recording studios, an on-line modeling facility that other agents can use to get exposure for their clients, graphics companies. Apple is on it, Bank of America is on it. Another part of it is the programmers, along with people who do the nuts and bolts of production: video directors and so forth.

*And you've got a site there too?*

Yeah. This allows us to have access through high-speed communication to computer servers at all of the sites to get the tools we need to finish a project. If we need to hire programmers, rather than go up to San Francisco or wherever to interview a bunch of people, I'll post up at MediaPark and describe what I need. It's still in the testing stage. Not everybody has a home page yet. It's a closed net; I don't think they're looking for *anybody else* during the testing period. When they do open up, maybe in the fall, it'll be open to the public. But you'll have to sign up and have a T1 line put into your home.

*What's a T1 line?*

It's a high-speed communication line into the Ethernet connection of your computer. You don't even need a modem.

*How does it compare to a modem?*

Most people have 14.4k baud modems, although some of us, me included, have 28.8k baud. I downloaded a 5Mb file that came over the T1 line from the facility in San Ramon to my computer. It took about a minute. If I'd done that through my 14.4k baud modem, it might have taken 20 or 25 minutes. It's so fast! After the tech guy installed it in my house and went back to San Ramon, I called him up and we connected on-line to the T1 line. I put up a program on my computer, and he used Timbuktu Pro, which is a program written by Farrallon that lets him see my computer. I had a Paint program up on the screen. I set my computer so he could control my cursor, and just by messing around we were able to do group work together, remotely. That's gonna happen musically in the future too.

With this sort of connection, you might post something and draw input from people you've never met or heard of.

Right. Eventually we're going to see all this stuff on the global Internet with ATM lines, which are even faster than T1 lines. Maybe by that time there will be a way to flag down those who might have the answer you need for whatever project you've got happening, based on their profile. We'll be able to play music and be in remote locations.

*Do you see any drawbacks to this scenario?*

There are two bad things. One is the situation of the haves and have-nots. It's bad enough as it is; this could make it worse. If you don't have a computer, you may not have a stake in the future.

*Presumably access will be affordable.*

I certainly hope so. But it's got

to be democratized before the situation even happens. It can't just be that all the white people and the rich blacks have computers. The other drawback is that it's gonna be easier to sit on your behind and do nothing but move your fingers. Actually, I already make a living doing that [laughs]. But it's kind of scary: Maybe we're building the ultimate couch potato. If you only communicate to people on-line, you're not meeting them face-to-face. You really shouldn't hide behind your computer.

*Does that kind of isolation have an impact on how your music sounds?*

Sure. That's why live albums sound different from studio recordings. When you're creating something, you're creating it in an environment. It's the walls, the sound of the room. If it's outdoors, it's the trees, it's the wind, it's the temperature, and it's all the people who are there to hear you. Even if you don't see them, it's also the movements they make, moving their hands and their bodies. Your body senses all of that stuff, and it all goes into the music.

*Your new album, Dis Is Da Drum, reportedly took you more than three years to make.*

Well, if we put the thing back-to-back, it probably took about a year and a half. But that's a long, long time. I was trying to do something that I hadn't heard anybody else do. I had a vague idea of what I wanted to achieve, but I knew what I wanted to start out with. As we began putting it together, what I wanted to achieve became clearer, although I didn't have any precedent to follow. I wanted to make a dance record, but I didn't want to in any way restrict the kinds of tools I had available to me for constructing the music. Once I decided that the whole palette would be available, then I would, as one would with any composition, restrict myself to what's appropriate. ►

## a selected discography

### AS LEADER/ CO-LEADER

*Best of Herbie Hancock*, Columbia.

*Best of Herbie Hancock: The Blue Note Years*, Blue Note.

*Dis Is Da Drum* (w/ Wallace Roney, Wah Wah Watson, Darrell Smith, Mars Lasar, etc.), Mercury.

*Empyrean Isles* (w/ Freddie Hubbard, Ron Carter, & Tony Williams), Blue Note.

*Evening with Chick Corea & Herbie Hancock*, Polygram.

*Feets Don't Fail Me Now* (w/ Watson, Ray Parker, Alphonse Mouzon, Coke Escovedo, etc.), Columbia.

*Future Shock* (w/ Bill Laswell, Michael Beinhorn, Sly Dunbar, etc.), Columbia.

*Head Hunters* (w/ Bennie Maupin, Paul Jackson, Harvey Mason, &

Bill Summers), Columbia.  
*Inventions & Dimensions* (w/ Paul Chambers, etc.), Blue Note.  
*Maiden Voyage* (w/ Hubbard, George Coleman, Carter, & Williams), Blue Note.

*Man-Child* (w/ Wayne Shorter, Maupin, Ernie Watts, Mason, Stevie Wonder, etc.), Columbia.

*Sound-System* (w/ Shorter, Henry Kaiser, Nicky Skopelitis, Laswell, Will Alexander, Anton Fier, etc.), Columbia.

*Secrets* (w/ Watson, Parker, Ray Obiedo, James Gadson, etc.), Columbia.  
*Speak like a Child* (w/ Thad Jones, Jerry Dodgion, Peter Phillips, Carter, & Mickey Roker), Blue Note.

*Takin' Off* (w/ Hubbard, Dexter Gordon, Butch Warren, & Billy Higgins),

Blue Note.  
*Third Plane* (w/ Carter & Williams), Milestone.  
*Tribute to Miles* (w/ Roney, Shorter, Carter, & Williams), Qwest (dist. by Warner Bros.).  
*V.S.O.P.* (w/ Hubbard, Shorter, Carter, & Williams), Columbia.

### SOUNDTRACKS

*Blow-Up*, Sony Music Special Products.  
*'Round Midnight*, Columbia.

### WITH MILES DAVIS

*Complete Concert 1964*, Columbia.  
*E.S.P.*, Columbia.  
*Filles de Kilimanjaro*, Columbia.  
*In a Silent Way*, Columbia.  
*Nefertiti*, Columbia.  
*Seven Steps to Heaven*, Columbia.

### WITH OTHER ARTISTS

*Adam's Apple* (w/ Wayne Shorter),

Blue Note.  
*By All Means* (w/ Alphonse Mouzon), Tenacious (Box 7595, Northridge, CA 91327-7595).  
*Give Me the Night* (w/ George Benson), Warner Bros.  
*Goin' Out of My Head* (w/ Wes Montgomery & Oliver Nelson Orch.), Verve.

*Mingus* (w/ Joni Mitchell), Asylum (dist. by Elektra).  
*Songs in the Key of Life* (w/ Stevie Wonder), Motown.

*Speak No Evil* (w/ Shorter), Blue Note.  
*Spontaneous Inventions* (w/ Bobby McFerrin), Blue Note.  
*White Rabbit* (w/ Benson), CBS Associated (dist. by Sony).  
*Word of Mouth* (w/ Jaco Pastorius), Warner Bros.  
*Zawinul* (w/ Joe Zawinul), Atlantic.



◀ On "The Melody," for instance, which is a rap tune, you give yourself room to play jazz voicings seldom heard in that idiom.

As a matter of fact, that's the cut I was least involved with on the album. I've had the reputation of being one of the founding fathers of hip-hop, because "Rockit" was a big helping hand in exposing that genre to the general public. But rap isn't really my *métier*. From what I can tell, rap is about putting a rhyme about life, about yourself, about what you feel, on top of a track. Well, I'm not a rhymers, so I hired people who are familiar with that idea. This track started with a rhyme that was written by a dear friend of mine, whose given name is Krishna Booker, but he uses the pseudonym Chill Factor. He did the basic rhyme, and then Will Rock, who was one of the producers, added some verses.

The words are pretty much a tribute to Herbie Hancock.

Well, in the hip-hop world, that's cool. They always write about themselves or somebody else. In this case, since I didn't write it, since they wrote about me, I said, "Okay, I can live with this, because it's kind of in keeping with the hip-hop thing."

At one point, the rhyme refers to your stint with Miles, and you play sort of a hip chord as if to underscore the jazz reference.

"Hancock blowin' blue notes with Miles," and I played [hums blue notes]. I did that on purpose.

You made a similar literal reference in your performance of the title cut from the new Stephen Sondheim tribute album, *Color and Light* [Sony Classical], by plucking a pointillistic theme on the strings as if in reference to Seurat's pointillistic painting.

That was hard to do. See, it's about Impressionism, so I thought that might be an interesting way to musically describe that aspect of the style. I was given a lot of freedom. They wanted to hear what I would do, taking whichever parts I wanted from what was written. It wasn't just taking the melodic portion and doing something with it. In a way, I think Sondheim did that with the composition itself. A lot of it sounds like something one might improvise.

What other projects were going on during your three years on *Dis Is Da Drum*?

I had the tour with the Tribute To Miles band. We really tried to capture the spirit of Miles, just by playing the way we play, because the influence of that band [Hancock, saxophonist Wayne Shorter, bassist Ron Carter, and drummer Tony Williams], not just Miles, shaped the future of playing for all of us.

Capturing the spirit of Miles is different from trying to imitate how the band used to sound when it was working with him.

That would be not capturing the spirit of Miles, the worst thing we could do. One thing Miles hated was not playing with a fresh ap-

proach. Capturing the moment was what Miles was about, not capturing some moments you'd already captured better because it was fresh then and it ain't fresh now.

Do you still run into people who can't see how you can play acoustic jazz with the Miles Tribute band, groove-based synth music, and other seemingly contradictory styles?

Well, some people say it positively: "Wow, how can you do both of those things?" I do run into some people who don't like the electric side of what I do, and that gives them kind of a negative attitude toward the acoustic side of what I do. But it's really rare for me to run into people who would be that disrespectful. I can do what I want. It's like saying I don't have the same rights as everybody else to do what I want.

That's not necessarily what all those people say. Maybe they're suggesting that you're just not concentrating as fully as you could on whatever it is they feel that you do best.

I could understand it if that's what they mean. But still, it's my right to do what I want to do. I might do what I don't do best because it's more of a challenge than what I do best. Once something gets easy, it's time for me to move on. Not that playing acoustic jazz is easy. Nothing I do is easy [laughs], because I always try to challenge myself.

You're saying that although you still play both acoustic and electric music, you're not doing either the same way you did in the past.

Well, I've discovered that if I do one and not the other, then I won't be giving what Herbie Hancock is. Because I'm both. I have finally realized, though, that I'm a much better acoustic player than an electric player.

How did you come to realize that?

I've done piano much longer, so it's really my foundation. I started playing synthesizers in '73, with the *Head Hunters* album. I've been playing acoustic piano since 1947, so I had a 26-year head start. It was just recently, through struggling to get some kind of hold on synthesizer work — not just playing but programming and all that stuff — that would be comparable to the work I do on the acoustic piano that I started to realize that the acoustic piano is what I play best. This was maybe two years ago that I finally admitted it to myself.

What are the most important differences for you between performing on piano and synth?

It's almost like talking about apples and oranges. The gradations of shadings you get are like the difference between color monitors and gray-scale monitors. The piano has so much resolution in giving one the ability to play so many kinds of nuances that are impossible to do on electric instruments at this point in their development. The piano is like 16 million shades of gray, whereas synthesizers are like color monitors that have maybe half a million colors. That's a huge difference. But within those 16 million

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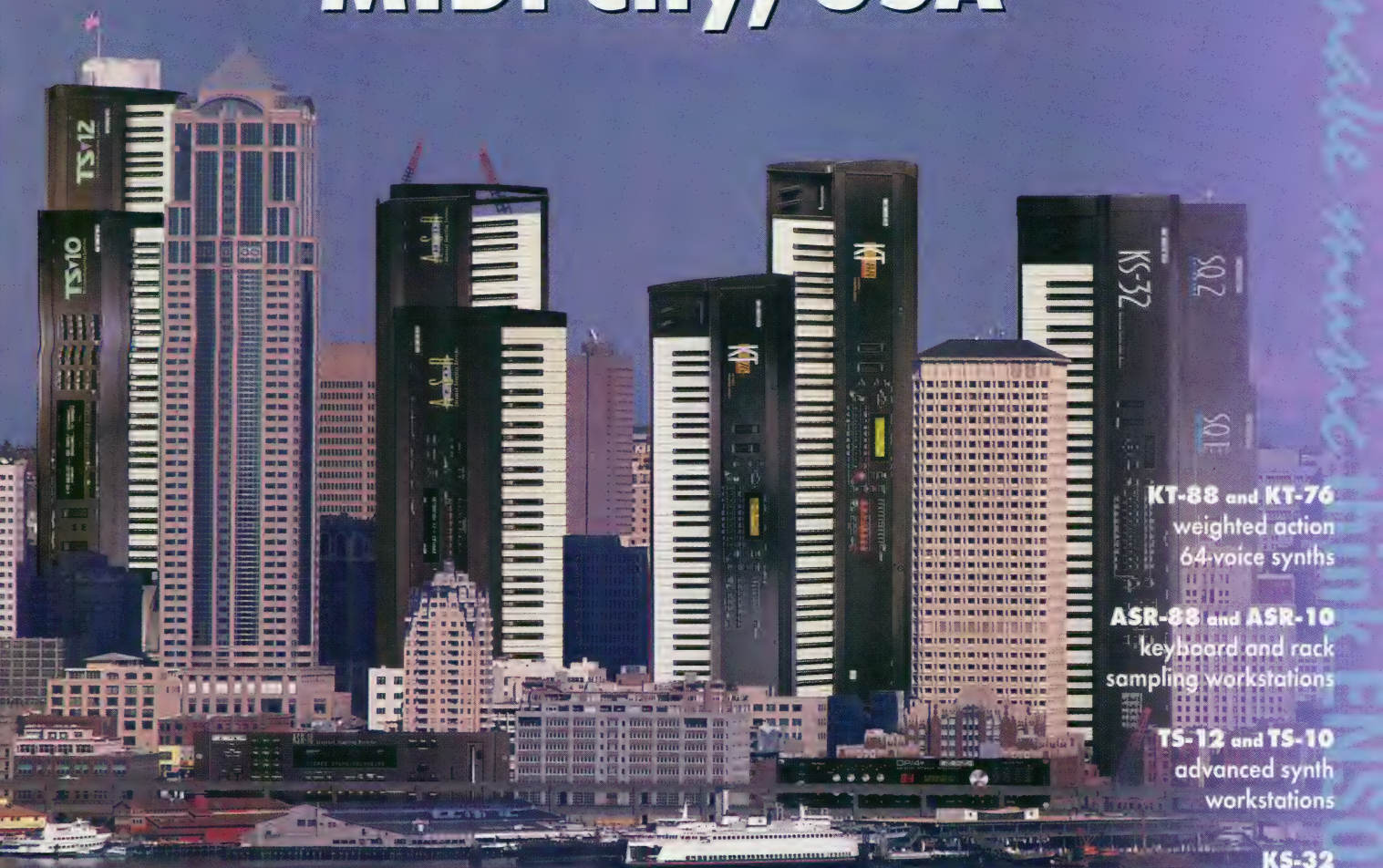
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shadings, the acoustic piano produces one basic sound, while there is no basic synthesizer sound. On the other hand, you can often tell the difference between two pianists just in terms of the sounds they get, but if two people are playing the same synthesizer sound it's almost impossible to tell the difference.

*You're saying that the piano is a single complete instrument. You can't talk about the synthesizer in the same sense, because each synthesizer functions as part of a larger instrumental setup.*

Right. A synthesizer builds instruments. It's an instrument maker.

*So you see synthesizers mainly as orchestral tools.*

I still play them because I think orchestrally. That's why I did *Dis Is Da Drum* the way I did. I put things together in my own special way. So I'm not saying that I'm giving up synthesizers. In fact, the more I play synthesizer, the better I get. I'm able to do pretty much what I want to do with the synthesizer. I would prefer to use the piano whenever I can, but sometimes it's not appropriate.

*How did you, as a pianist trained to play in real time, develop your approach to electronic music, with its greater emphasis on overdubbing, sequencing, and so on?*

Well, I was into science before I was into music. I've always been a tinkerer. I started play-

ing piano when I was seven, but before that I used to take watches apart and try to put them back together, build model boats and planes, that kind of thing.

*So you were familiar with the idea of putting in work that didn't immediately reward you, as opposed to the immediate reward a pianist gets through playing.*

Right, but that's only one application on the piano. If you're doing classical music, you've got to learn the piece. That means it's not real time; you've got to practice it. The same thing applies if you're writing a composition, because composition is not real time. So the learning process as a step toward improvement is not real time.

*The process of assembling an electronic piece is not fundamentally different from the process of learning, practicing, and finally performing a piano piece.*

It's not exactly the same, but one could draw that parallel. My point, though, is who cares? It's all still about music.

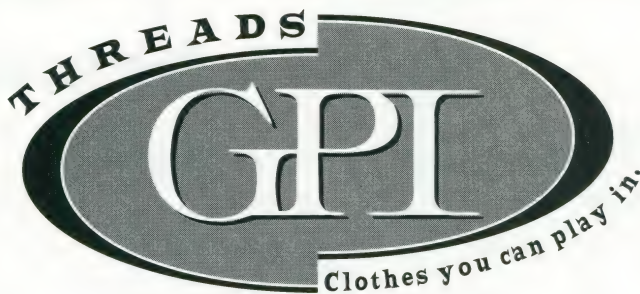
*Why do you think people perceive so many barriers between methods and styles of music?*

First of all, people tend to think that what they like is good and what they don't like is bad. It's hard for them to think they wouldn't like something that's good. But the whole concept of good and bad is strange, because we're talking about works that human beings create to somehow turn people on. That applies to all the arts. The

artist may have a purpose in mind, but his or her work is really for the person at the other end who didn't do the creating. Sometimes something is done because the artist has an urge to do it, regardless of the person who is going to perceive it. An example of that is an artist who creates something that's way ahead of its time. Nobody can understand it, it's really foreign, everybody hates it. Then years later, somebody figures out a clue to dealing with it. All of a sudden, it's exposed for all its great beauty. That does happen: Even though that urge is ahead of its time, it winds up being recognized. If it *never* gets recognized, I can't say that it has no value, but there's nothing we can discuss about it.

*Should artists map out their projects in part based on what the public wants to hear?*

I'm not saying that. If you check out what I've done in the past, you'll see that I haven't kowtowed to the public at all. My feeling is that music in itself is a bunch of notes, abstract things that don't have any value until they're put together in a certain way. Putting them together *without life*, without a story, isn't what it's about either. It doesn't matter whether you're poor or rich. Nobody escapes having something to deal with in life. Music is about taking those tools — those notes, those effects, whatever they are — and telling a story about life, whether it's your life, the life of someone else, something you've touched or smelled. If you're sitting in



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your room, practicing, with no experience, what can possibly come out? Unless it's something from a former life, which is cool too. I'm a Buddhist, so that's included.

*When people first heard you, even as far back as your classical recitals in childhood, they heard, among other things, someone who had put in the time to master a traditional discipline. But that discipline, whether we're talking about doing scales or learning to read music, isn't necessarily relevant in some of the types of music you've played. Things like Head Hunters and "Rockit" probably threatened some people by turning away from certain traditions which they had previously used to define you as an artist.*

Exactly. It made them feel uncomfortable because they thought they knew who I was. Now, that person could learn to be open enough to follow an artist they've learned to trust. Never put him in a box, just follow him. If he goes somewhere else, go with him. Stay with him for a while. Check it out rather than just conclude that it ain't happening. I would do what I do if I didn't know what I was doing.

*That may be asking a lot from people who put so much stock in formal aspects of music.*

I know, but I went through the same things some of those people went through. I was already listening to funky music before I did *Head Hunters*, but I learned that deep inside I thought

it was inferior to the jazz I was doing. I must have suppressed that. When I realized this, I became disappointed in myself. I was embarrassed to feel that this aspect of music that came out of the African-American experience felt inferior to some other aspects of that experience. It all came out of the African-American experience. The roots are the same. Anybody who doesn't know that should take off the blinders.

*Was there ever a time when you felt that you were turning away from the disciplines that had been important to you?*

Well, first of all, it was not easy to do *Head Hunters*. It was harder than what I had been doing. Why?

I wasn't accustomed to working in that discipline. I've learned that it's important to continue to discover who you are, to continue to find out what your boundaries are and where your self lies in your expression. The only way to do that is to keep reaching outside of where you think you were to see what happens: How does it feel? Are you enjoying it? Do you feel that you're doing something of value? Or is it just a chore that has no apparent reward? The more I do that, the more I find places for myself in a lot of areas outside of what I had done before. But that's what life is all about. Falling off the bike is how you learn to ride. When you're a kid and you first look at that bike, it seems terrifying. You

see people riding along on two wheels, and you know you can't do that. You think you'll never do that. We go through life learning lessons to find out who we are, what we're capable of mastering. But not necessarily mastering.

*Exploring?*

Thank you. That's perfect.

*If you had stayed in one area of music, maybe you would have found things you haven't found to this day because you would have gone deeper into that area. But there would be other sides of you that you might not have ever brought to artistic life.*

I don't think I would have gotten deeper into anything, because I would not have explored. What makes the depth is the exploration. If you stay locked in a room and just practice music, you'll be a terrible musician. You can't do that. You've got to be a human being; that's where the greatest reward lies. It's not about being a musician, yet that's the only way to be a musician.

*Part of being a musician does involve practicing.*

But that's what I was doing with *Head Hunters*. It was like trying to learn new scales. I learned so much from [bassist] Paul Jackson on *Head Hunters*, but not in a formal way. It's really difficult, if not impossible, to show someone how to play, for example, the kind of Clavinet lines I was doing in a funky musical

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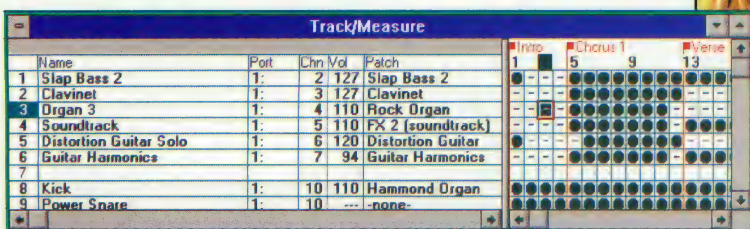
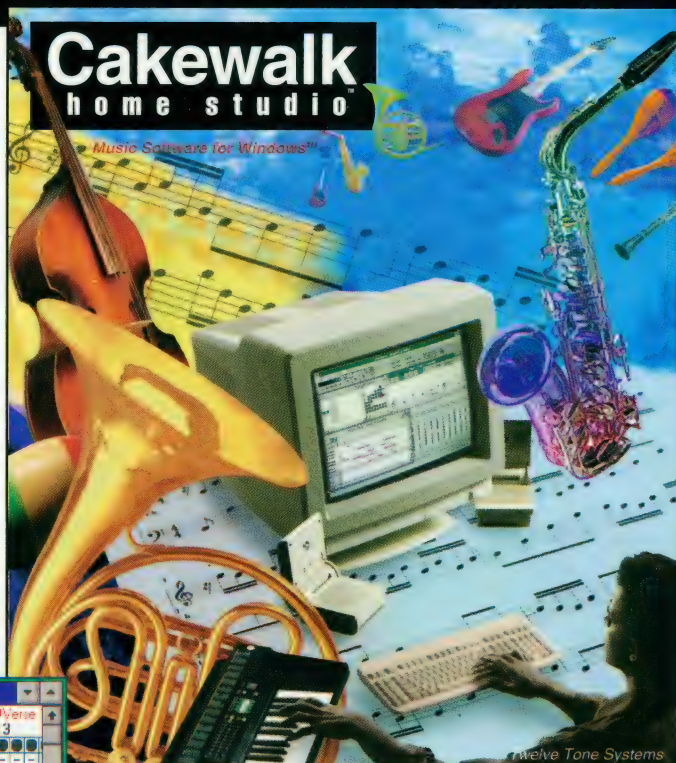


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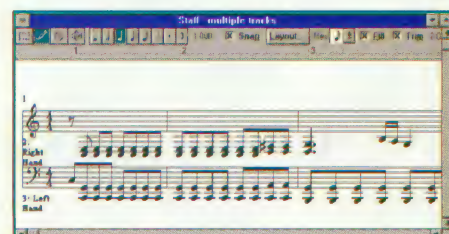
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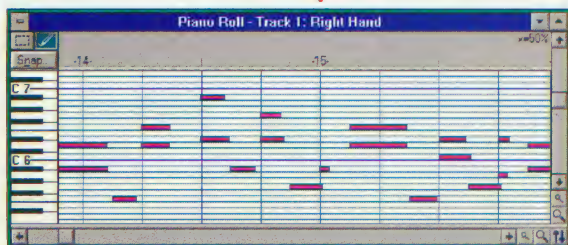
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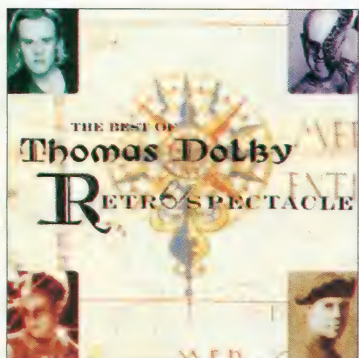


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situation. I don't know of any school where you can learn that; you have to learn through experience and example. Paul showed me how this part fits with that line, and I assimilated that. I got to be pretty good at that way of learning: I could hear Paul play a line, and between that and [guitarist] Wah Wah Watson, I could figure out what I was supposed to play. I'm not even talking about playing in the pocket. It's assumed that you play in the pocket. Besides that, you've got to know what the line is supposed to be based on what everybody else is playing. You could compare it to African drumming: You might have seven drummers, and each one is playing a different part. The parts may be simple, but when you put them together there's a lot going on. People may not perceive that, but I don't care. The object is not for them to perceive what you're doing as complex; the object is to let the music make them feel good.

*How do you feel about the archival direction so many young players are taking in jazz?*

I think that's very healthy. Maybe it's time for that to happen. I've heard the work of some young people who may have been inspired by stuff that happened in the '60s, but they've created their own separate approach with it. Geri Allen, for example: She doesn't sound like somebody who's been heavily influenced by some other piano players. She's created a really different way of playing the piano. And [trumpeter] Terence Blanchard

has written some very together compositions that blow my mind because I can't figure out what's going on in them. In Miles's band we did all kinds of things that nobody could figure out; that tunes your ear up to getting a clue about what other people are doing. And I'm good at that. But I love the fact that I can't figure out what Terence is doing [laughs]. So the musical part of all this is fine. I only object to the attitude that some of these people have. I mean, some people are really elitist about it, and that's not fair. There's room for all of us on the street of music. Why the hell do we need this in jazz? It's hard enough to sell records as it is, without all this bickering about nothing.

*Do some young players approach jazz as if it were a museum music rather than as a challenge to innovate?*

Well, there has to be some of that, but I'm not that in touch with what's going on. First of all, I live in L.A. To really be in touch, you've got to be in New York. Not only that, I'm not even in touch with L.A. I'm doing too many things besides music. I'm not always a musician. I'm a musician when I'm working with music. But I'm also a father, and a husband, and a son. I'm a citizen. When I go and vote, I'm not voting as a musician; I'm voting because I live here. When I'm talking with my next-door neighbor, we don't talk about music, so it doesn't matter whether I'm a gardener or a professor. So who am I? I'm still exploring myself, and this is what I'm trying to find out. ■

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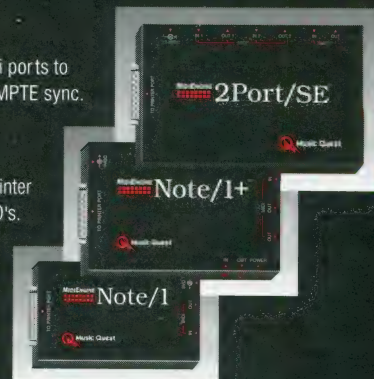
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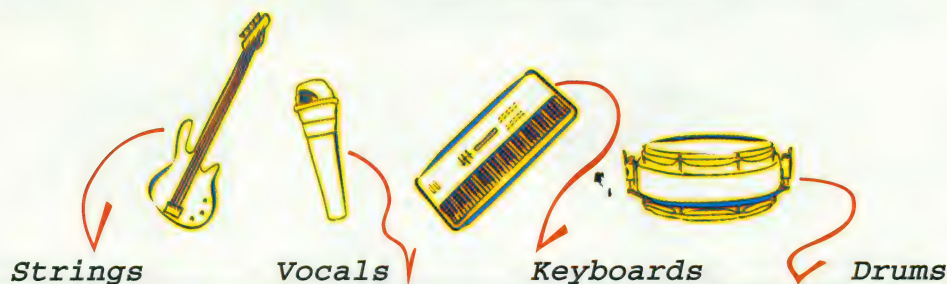


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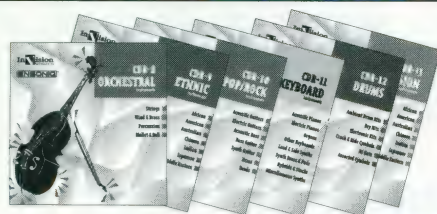


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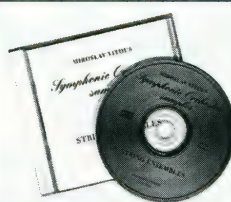
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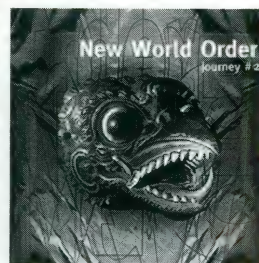


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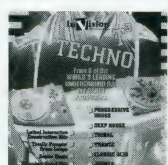


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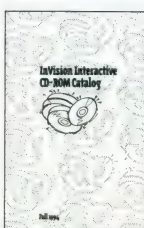


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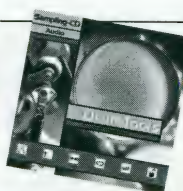
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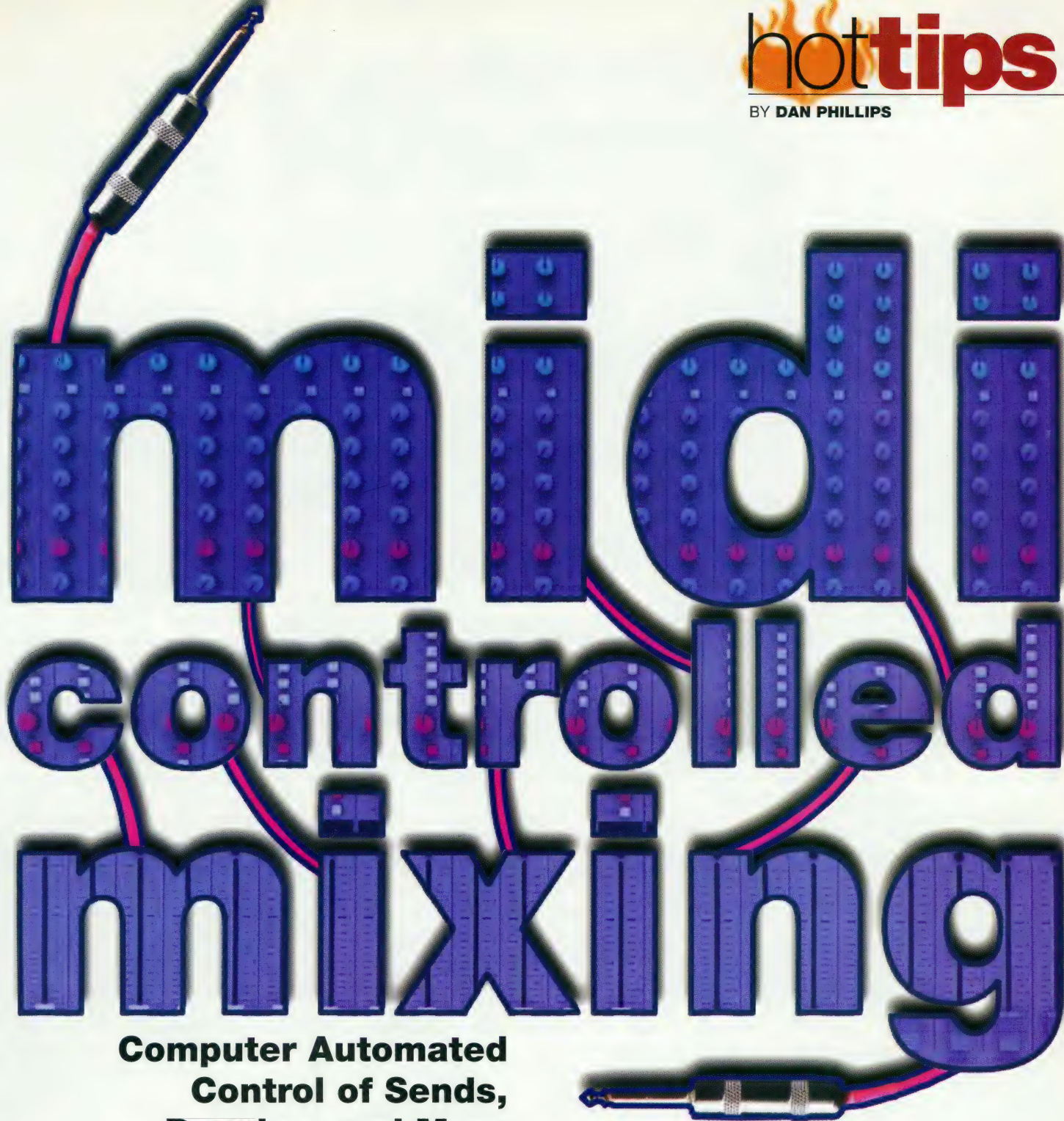
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in bringing automation from the domain of megabucks-only consoles into the realm of the project studio.

With the transition to the project studio also came the replacement of proprietary automation systems with the *lingua franca* of electronic music, MIDI. Since we've already been using MIDI for controlling synthesizer volumes and panning, it seems a natural enough transition. Indeed, most sequencers can handle MIDI mixing chores right out of the box. Many have their own screens full of assignable, animated sliders. All of the tips described in this article should work with any modern sequencer, and most will work with a wide range of MIDI gain control devices, from the hippest fully automated mixers down to the simplest MIDI-controlled VCA packs.

This article focuses mainly on MIDI-controlled mixing of audio tracks, but remember that there are many benefits that MIDI can bring to automated mixing, even without any "mixer automation" *per se*. MIDI program changes can automatically configure your effects processors, and MIDI volume can keep your synth levels properly balanced. Continuous controllers can be mapped to effects parameters to create dynamic special effects that might require several pairs of hands if done manually (if they can be performed manually at all).

In this article, I needed a term to refer simultaneously to automated mixers (digital and analog), external VCA-based automation, and non-VCA automation (such as the Niche Audio Control Module). I've chosen the inclusive but rather cumbersome term MIDI Gain Control Device, hereafter abbreviated MGCD.

## BEFORE THE BEGINNING

I've always found it useful to reserve the first measure of a sequence for setup data — MIDI volume and pan settings, program changes, etc. This ensures that there's time to send out these parameters, and time for the devices to respond to them, before the music begins.

For instance, in that setup measure, you can mute all tape tracks and mixer channels, so that there is silence right up until the first note. Many digital effects processors take a few moments to change programs; sending a program change at the top of this dummy measure ensures that the effect is ready to go by the time the actual music starts.

## INSTRUMENT, MUTE THYSELF

One of the prime applications for MGCDs is the muting of noisy tracks. In an acoustic recording situation, this noise might come from hissy guitar amps, the ambient background picked up by microphones, and so on. In my own MIDI-based studio, however, I've found that most of the noise is generated by effects proces-

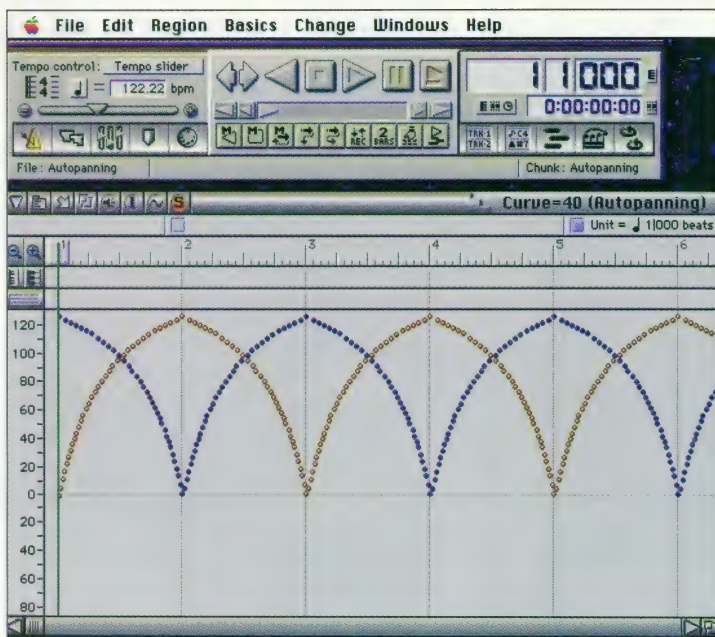


Fig. 1. Follow the bouncing data: These simultaneous inverse controller curves can be used to program auto-panning on an automated mixer that doesn't provide direct control over panning. (See text on page 66.) The screen display is from Mark of the Unicorn Performer.

sors and the on-board effects of my synthesizers. While the noise generated by any single device may be fairly innocuous, the cumulative noise buildup can become irksome, especially just before the start of a piece of music.

If you have gain automation for all of your mixer inputs, then the solution is simple: Just mute all of the tracks prior to the song start. If you only have eight or 16 channels of external MGCDs, however, then this may not be possible. Thankfully, though, if you're using your MIDI devices as "virtual tracks" and mixing them live to 2-track, there are some muting and noise-reduction tricks that you can play without even reaching for an MGCD.

The basic idea behind these tricks is that the noise often seems to come from the algorithms running in the effects processors, as opposed to being inherent in the synth or audio track that you want to be listening to. This means that, by silencing the effect algorithm one way or another, you can do the muting within the synthesizer or processor instead of at the mixer — thus saving valuable MGCD channels for other tasks.

**Technique 1: Real-Time Volume Control.** If the effects processor or synthesizer allows you to modulate the output level of the effects, then you're on easy street. Set up a modulator to control the level; set this to zero at the top of the sequence, and then bring it up as required. This can be preferable to Technique 2, below, as you don't have to worry about any glitches or delays caused by program changes.

It might occur to you to simply send out a MIDI volume command of zero to the offending devices. For synthesizers, unfortunately, this is almost guaranteed not to work, as MIDI volume usually controls the level going *into* the effects. Effects processors will vary, but only one of mine responds to MIDI

volume as a default.

**Technique 2: The "Mute" Effect.** If your effects processor or synthesizer doesn't allow real-time control of the effect output level, don't despair; we still have a few tricks up our sleeve. These are all based on the idea of setting up a special "mute" effect, which is as quiet as possible. Call up this effect at the very beginning of the sequence (in that extra first measure), and whenever you need maximum quiet in your mix. In my studio, wherever possible, program change 0 is designated as the mute effect; that standardization saves time poking around on each device.

You can create the mute effect in various ways, depending on the capabilities of the individual device. Some effects processors and keyboards have a "No Effect" or "Null Effect" algorithm, which either passes through audio unchanged or mutes the output altogether. This

will probably do the job. Also, even if output level isn't modulatable in real time, it may still be programmable; if so, you can create your mute effect by making an effects program with zero output level.

If a unit supports *none* of the above options, listen to all of its effects algorithms and search for the quietest one. Often, there will be significant variation between them. For instance, a delay line or EQ (with flat settings) will almost definitely be quieter than an overdrive, unless the overdrive algorithm has a built-in noise gate at its output.

However you create the mute effect, make sure that you allow enough time for the program change into the "real" effect; some effects processors take a moment to re-configure themselves.

## COMPING

Comping — making a composite, also sometimes known as "assembly" — is the process of assembling a single performance out of the best parts of a bunch of different takes on various tracks of a multitrack. Typically, this is done by muting all of the tracks to be comped, and then un-muting single tracks as desired, phrase by phrase, to create the finished product.

Muting can create abrupt, audible transitions, though, which can mar the coherence of the final track; ambient noises or breaths may suddenly burst in or cut off, or may clash between takes. Sometimes smooth fades in and out, or even cross-fading between channels, can create a much more natural transition. Doing a manual comp, it can take all of your skill and attention just to get a good "performance" on the mute buttons. But with automation, crossfading is as simple and repeatable as muting, so there's no reason not to give it a try.

Continued on page 66 ►



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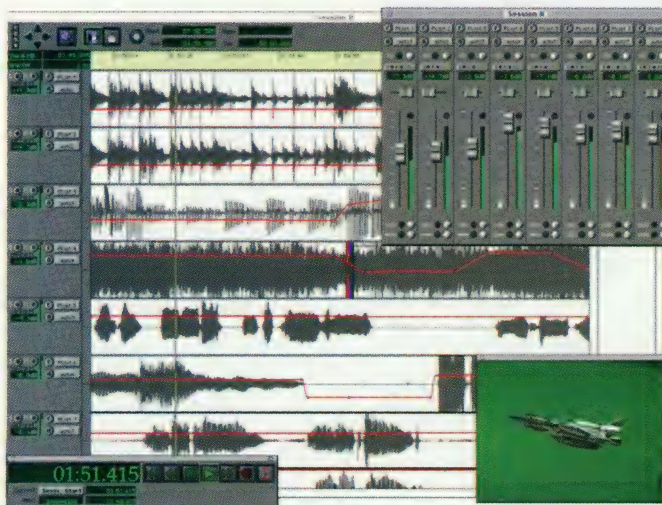
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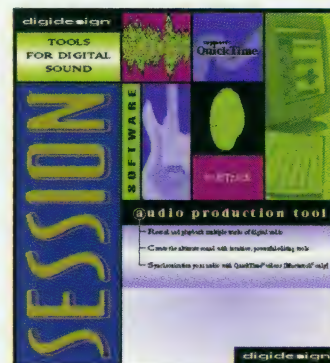
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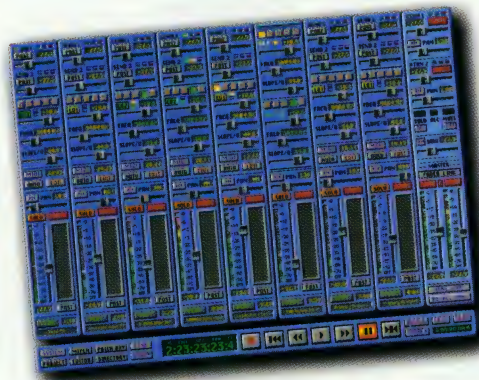






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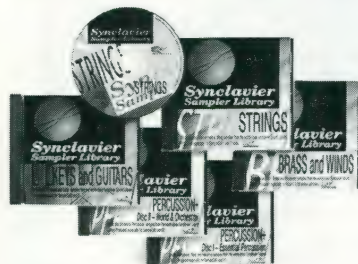
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## hot tips

◀ Continued from page 62

### AUTO-PANNING

Without a doubt, the coolest-looking pieces of studio equipment I've ever seen were a set of analog auto-panners. These small black modules were dedicated to one simple function: panning a signal from right to left and back again under the control of an on-board LFO. Each had a pair of red lights, whose brightness represented the relative levels of the left and right outputs; as the audio moved from left to right, the light on the left would fade out as the one on the right faded in. I could have watched them for days (especially if we hadn't been trying to get a song out the door).

The audio effect was (almost) equally cool; applying a slow auto-pan to a pad or percussion part added activity and depth to the mix without the aural clutter of more common signal processing tricks, such as chorus or reverb.

I have yet to see an MGCD with that kind of a light show, but any MGCD can provide auto-panning — even ones that don't explicitly support MIDI pan (see "Panning on Volume-Only MGCDs," below).

If your MGCD responds to MIDI pan (controller 10), then you're most of the way there; the only thing that remains is to create a MIDI "LFO" to sweep the pan back and forth. To do this, draw or generate a curve of controller 10 data in your sequencer. As a first pass, start at a value of 0, move up to 127 over the course of two beats, and then descend to 0 again over the next two beats. Assuming a 4/4 meter (my apologies to the prog rockers out there), this will pan from left to right and back again over the course of a measure.

To make this into an "LFO," copy the measure repeatedly over the course of the song (or for the length of time that you want the auto-pan to last). The two-beats-up/two-beats-down frequency is just intended as a starting point; for any given piece of music, you may want slower or faster panning, either synced to the music or free-floating. Also, there's no need to repeat the LFO exactly; you can create slowing-down and speeding-up effects, or vary the rate by small or large amounts, just to keep things interesting.

Experiment with the shape of the controller curve; depending on the desired panning effect and your particular MGCD, a simple, straight slope may be best, or a slight curve may sound better. In some instances, you may also want something more subtle than hard-left to hard-right panning; try more gentle min and max values for controller 10, such as 32-96.

### PANNING ON VOLUME-ONLY MGCDs

So, what do you do if your MGCD doesn't explicitly support pan control? Well, you're still in luck; panning is basically no more than simultaneous inverse control of volume for two channels, so it can easily be created by using two channels of a volume-only MGCD.

You'll want to send the same audio signal to both MGCD channels. To do this, you can use a Y-cord, create a patchbay mult, or send the channel to an unused stereo bus on your

mixer. However you split the signal, connect the split signal to the two channels on the MGCD, bring up the MGCD output on your mixer, and pan channel 1 hard left and channel 2 hard right.

Now, if you turn channel 1 completely down and channel 2 up, the signal will be panned hard right. Conversely, if you turn channel 2 down and channel 1 up, the signal will be panned hard left.

This is pretty simple, so far; crossfading from one side to the other takes just a little more work. Figure 1 (page 62) shows approximately what you'll need to create; basically, as one channel fades up, the other fades down. If you have a sophisticated MIDI processor, such as Opcode's Studio 4 or 5 hardware, or their Max software, you may want to map a single slider to send out inverse values to the two channels.

Setting up a good-sounding curve shape will probably take a little bit of trial and error. Strictly linear crossfading didn't work well for my MGCDs; I ended up with the curve shape seen in Figure 1. The challenge, at least for the canonical equal-power pan, is to maintain constant volume as the image shifts from left to right. In addition to trying simple curve shapes, you may wish to experiment with S-shaped curves, in which the slope turns around smoothly at the bottom of the range.

### AUTOMATED SIGNAL PROCESSING

With a fully automated mixer, you have the luxury of being able to change EQ, compression amount, and so on for different sections of a song. With volume-only automation, it might appear that this wouldn't be possible. In fact, it's quite easy, as long as you can settle for snapshot automation (as opposed to dynamic control) and can spare some extra channels on your mixer.

For instance, let's say that you want to allow the lead vocals a pretty wide dynamic range during the soft, mellow verse of a song, but need to compress them fairly severely so that they'll hold their own during the chorus. You'd start by muting the signal to two channels of the MGCD, as discussed above; you'd then route the two channels out of the MGCD to two mixer channels, one with no compression (for the verse), and one with a compressor on the channel insert, providing a large amount of compression (for the chorus). Simply mute track 2 during the verse, and switch to muting track 1 during the chorus. Voilà, automated compression.

The same trick can be applied to different EQ settings, different effects send amounts, and so on. (See below for dynamic control of effects sends.)

### AUTOMATED SENDS

A touch of extra pitch-shifting on the guitar in the chorus, or more early reflection reverb on the snare in the bridge, can be a very cool touch. There's nothing complicated about automating an entire effects send; just insert an MGCD channel between the send out and the effects processor in.

Continued on page 68 ▶



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# BAG END

## hot tips

◀ Continued from page 66

### AUTOMATED SENDS FOR A SINGLE CHANNEL

Automating the send for a single channel, while the send levels stay the same for all the other channels, is a touch more tricky — but it's still pretty easy, as long as your mixer has flexible busing options. The concept is similar to the example above about adding different amounts of compression.

Send a copy of the track to a second channel on the mixer, using a y-cable, mult, or extra bus. Route just the second track through an MGCD channel. Set the busing for the second channel so that it is *not* routed to the main outs, and turn the desired sends up fairly high. Any signal sent to this channel will now be heard only by the effect, with no additional dry signal appearing at the main outs. When you want to increase the effect send for the original channel — to create temporary reverb or delay splashes, for instance — just open up the volume level to the second channel.

If your mixer doesn't allow this sort of busing, you can achieve the same result by using a submixer to combine the main send output with the individual channel send, and then routing the sum of the two signals to the effects processor input.

### AUTOMATION PLUS MIXING EQUALS EXTRA BUSES

Many external MGCDs also feature some sort of limited mixing capabilities. They may, for instance, give you a mix out for inputs 1-4, and another for inputs 5-8. If you are using these devices with a conventional mixing console, you may have regarded these mix outputs as superfluous — but they can be quite handy in certain circumstances.

For instance, some time ago I was mixing on a board with very limited busing capabilities. We were doing a vocal comp during the mix, and we wanted to run the results of the comp through the same signal path, including some compression and EQ. The trouble was, there were three tracks in the comp, and the way the board was laid out, there was no way to merge the signals together.

Fortunately, we noticed that the MGCDs we were using featured a mix out. The three vocal tracks were routed into the MGCD, comped together, and the result tapped off of the mix out instead of the three individual outs; this merged signal was then sent off to the compressor, then to the EQ, and finally back to a single channel on the board.

### THE FADE-OUT

MIDI Automation is pretty new, which means that there are plenty of techniques waiting to be discovered — so go to it! Just remember, ask not what you can do for your mixer, but what your computer can do for your mix. ■

*Dan Phillips is a principal in Touch Productions, providing music for television, film, multimedia, and album projects. He also happily spends his weekdays as part of the team at Korg Research and Development.*

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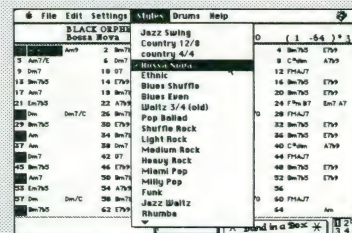
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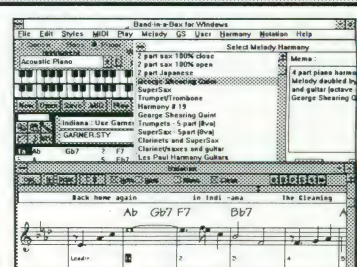


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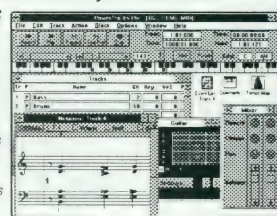
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## Dr. Know-It-All's Famous Demo Tape Workshop

BY JIM AIKIN

**You can learn a lot by listening to other people's** demo tapes. Odd as it may seem, sometimes you learn even more from work that fails than from work that's totally professional. After all, you'll hear professionally produced music on the radio every day. Because recording artists make it seem easy, you may never discover how hard it is to craft something ►

.....



so painstakingly that it looks easy. In a workshop, on the other hand, you get to see imperfect technique in all its gruesome splendor. When you turn back to your own work, you may discover, to your chagrin, that you're making some of the same mistakes.

I learned this lesson years ago, as a participant in an ongoing writer's workshop. Every month I got together with six or eight of my fellow science fiction writers. We passed around copies of manuscripts, took them home, and the following month brought them back with detailed critiques scribbled in the margins.

It wasn't a kissy-kissy ego-stroking session, either (thanks to Kevin and Sasha, who set a tone of no-compromise professionalism). The idea was to point out where a piece of work failed. Was the idea good but the technique flawed? Was it technically sound but boring? Were the orbital dynamics of the alien solar system a physical impossibility? Or was the idea simply moldy because Robert Heinlein did it better 40 years ago?

Later I tried to start a similar workshop for home studio recordists. We got together a few times, but it never flew. For one thing, a workshop takes commitment. If people phone at the last minute and say they can't make it this month, there's no workshop.

Now that home recording is so widespread, I'd love to see other musicians try the experiment. It might not work, of course. Maybe musicians don't have sturdy egos like writers; maybe a brutally frank critique just hurts too much. Or maybe if you're working in exactly the same style as other workshopers, jealousy would get in the way, while if you're not, their comments would be irrelevant. I still think it's well worth trying, though.

If you don't have time to start a workshop, or can't find active musicians who can make the commitment, maybe this article will be the next best thing. Not too long ago, as part of our 20th Anniversary Reader Tape Contest, the *Keyboard* staff sat down and listened to almost 800 cassettes. Some of them were stunning on every level — composition, recording quality, keyboard performance. Many were solidly crafted, and almost all had definite merit in one way or another, be it a good groove, some imaginative sound design, or an effective chord progression.

In tape after tape, though, we spotted similar weaknesses. If you sent in a tape, don't worry; we're not going to name names. Feel free to assume that we were knocked out by *your* effort, that the comments below refer to other folks' submissions. In fact, that's very likely true. No single member of the staff listened to all of the entries; I myself listened to something less than half of them. Even though this isn't personal feedback, though, maybe you'll find some comments that will help make your next demo more incisive.

Or maybe you'll disagree with all of our observations and record a masterpiece that deliberately breaks *all* of the so-called rules. This article is certainly not intended to be a definitive guide to "the right way to compose



music." All we're trying to do is suggest some things you might want to think about or try out. Your own ear, and those of your audience, are the only valid judges of the results.

Having said that, here are some of the problems that caused smothered yawns, the rolling of eyeballs, or the dreaded flush-handle gesture with gushing water mouth noise:

**The Intro to Nothing.** Five years ago, many of the entries in our annual Reader Soundpage Contest used the classic layered intro — four bars of a rhythm or chord pattern, then a kick or kick/snare entrance, then another rhythm instrument in bar 9 and another in bar 13, with the bass (usually) entering in bar 17 to get the tune rolling. Not a bad concept, it's just awfully predictable.

Apparently the layered intro has gone out of fashion. This year we heard it now and again, but the stock intro now tends to consist of a fairly catchy two-bar phrase repeated four times without any major entrances or changes in the material.

The layered intro had some built-in dynamism that gave the tune a rising sense of excitement. This time around, the intro often failed to build. When a phrase is repeated four times without developing — well, it needs to be a real grabber. Otherwise, the listener's attention will wander. (Ours sure did. Granted, we weren't in a typical listening situation.) As intro-type material, the phrases that kicked off the tapes were naturally incomplete, naturally a prelude to what was to come. That being the case, they weren't grabbers, so two statements would probably have been plenty.

What's worse, when the for-real A section of the tune arrived, it was often no more exciting than the intro. A change in the instrumentation might signal that this was the "main subject," but the excitement level didn't rise. We found ourselves wondering, was this the B section? Was what we were calling the intro actually the A section? Stringing together a series of attractive riffs in the same key and tempo is not enough; you need to think about where you want the emotional peaks and valleys to fall.

We heard some tapes with actual dual in-

tros — usually a gauzy free-time intro followed by an eight-bar (or 16-bar) chord riff intro that preceded the melodic entrance. Maybe the First Commandment of Top 40 radio bears repeating here: Get to the hook before the one-minute mark. In instrumental music it may be harder to tell what's the hook; but as the composer, you ought to *know* what the hook is, and your listeners should feel it, even if they can't identify it as such.

**Dropping Off the Bridge.** Some tapes started out with a strong A section, but the B section seemed entirely unrelated to it, as if the composer was creating a medley rather than a unified piece. Changes in texture were sometimes made at the start of the B section seemingly for the sake of variety, even when the result was that the piece failed to hang together as a whole. The groove fell apart when the change began.

In other pieces, the B section was a development of the A section idea, but it lost energy — usually by some of the instruments dropping out — when it should have gained energy. A bridge in an instrumental tune is not the same thing structurally as a song chorus, because it isn't usually repeated, but it's worth considering whether the B section ought to have the same rising emotional impact that a chorus has.

**Melody? What Melody?** In most bands, keyboard players are in the rhythm section, not the front line. They may know how to take a bare-bones chord chart and build it into a monster riff, yet not have much experience in crafting memorable melodies. We heard many well-produced tapes with no discernible lead melody at all (and we're talking pop music here, not ambient techno). In other tapes, the melody was simply dull, stumbling along a scale in quarter-notes, running in boring parallel thirds with the bass line, or played too quietly. Some talented players obviously "composed" their melodies by improvising; their tunes meandered aimlessly, with no focus.

An ostinato is not a melody. An ostinato may be in the same pitch range as a melody, and it may have passing tones, but if it marches along with the chord progression without any phrasing created by strategic sustained notes and rests, it's not a melody.

The choice of melody timbre was sometimes a problem. A stiff, uninflected melody on synthesizer horn is a guaranteed turn-off. In pop music styles, the melody is the focus of the listener's attention. When composing it, pretend you're in the front line singing your soul off. Oh, and don't forget to breathe. We heard some melodies that went on and on and on and on and on and on and on and. . .

**Groove? What Groove?** Good drum programming is a joy to hear — not only because of the wonderful vigor that it gives to a track, but because it's so much harder to do well than it sounds.

The commonest failing of drum tracks was excessive rigidity and repetition. Granted, there



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are styles in which highly repetitive drumming is desirable, but even in these styles, if you listen to the pros you'll probably find that their tracks are less repetitive than you thought at first. The pros also go to a lot of trouble to design the sounds of their drums so that the sounds (a snapping snare drum, say) can be repeated without the slightest variation for three minutes without causing aural fatigue.

A few tapes tried to avoid the rigid quality of sequenced drums by not quantizing. You'll often read in magazines like *Keyboard* (well, there are no magazines like *Keyboard*, but you know what we mean) that it's a good idea not to quantize the drums. But it's important not to apply this dictum in a naive way. If the drums lurch around like a zombie rather than laying down a smooth groove, the fact that they're unquantized won't help. They'll still suck. (If your sequencer is limited to 24 ppq, don't even think about "human-sounding" drums. Quantize everything in sight, and call it a tight dance groove.)

We heard a few tapes in which a two-bar drum pattern that should have been quantized was not only allowed to stumble around but also block-copied so that the same uncomfortable beat was repeated over and over. Assuming that you can play a drum track with a reasonable feel, performing the whole track by hand from one end of the tune to the other will probably give you much more natural-sounding variations from bar to bar. Block copy-

ing is for sketches, not for finished production.

A few composers were so enamored of their chord riff that they composed a drum pattern, and maybe even a melody too, that matched it accent for accent, rather than laying down drums that kept the time and a melody that soared over the top. Having the whole "band" do the same syncopation for a whole phrase is an orchestration technique best reserved for a contrasting section in the middle of the piece.

A couple of arrangers recorded intros that sounded like they forgot to switch the metronome off. A single sound, such as a side-stick, was repeated on every single beat for 16 bars, without the slightest inflection. This can happen because the first track that you lay down becomes "invisible" to you as you're adding other tracks. You're focusing on the other tracks and no longer hearing the initial sound at all. The fact that it's too lifeless or too loud may escape your notice.

A well-shaped eight-bar phrase is . . . well, it's well-shaped. Some sounds may repeat in blocks, but the ensemble as a whole should always be moving in some specific direction. Ideally, a drum machine track should create the illusion that the drummer is responding to whatever else is going on at the time, and aiming at the next important downbeat. Why limit yourself to a tom runaround at the end of the eight-bar phrase when you could be dropping ghost snare notes in every other bar, and switching around the open hi-hat too?

**Block That Reverb.** The worst thing about synthesizers, bar none, is cheap digital reverb. Pump a whole arrangement through a single cheap digital reverb (which is all you've got if you're playing your tune on the average General MIDI module) and kiss your mix goodbye. It doesn't sound big and impressive, it sounds small and cramped. If you want a bigger sound, pull back on the reverb sends. Record some of your tracks *totally dry*. Of course, this will shine a harsh light on any weaknesses in the musical content, but if you're trying to hide musical weaknesses behind a cheap digital reverb, you're doomed in any case.

Processing all of the drums through a single reverb is usually a way to reduce the mix to a dull roar. Some people will tell you that the big Hollywood producers do this to make it sound as if the drummer is actually playing in a real acoustic space — but the big Hollywood producers are using high-end Lexicons, which can handle multiple noise bursts without losing clarity. If you must try this trick, select a room algorithm with a short decay time, and keep the send level(s) of the drums low.

Reverb isn't the only offender in home studios. In general, it's a poor idea to rely on texture or sound color to create a dramatic mood when your studio isn't qualified enough to create real textural vibrancy and depth. These days, string synth chords, unless processed with absolutely sumptuous stereo

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chorusing, can only be used with irony — that is, to imitate a Mellotron for that dim-and-distant-memory effect.

If you *do* have a great studio, you can fall into the opposite trap: Relying on great sounds to create musical impact when the actual notes you're playing are strictly ho-hum. (Maybe we shouldn't be too hard on people who are guilty of this; some of them sell millions of records.)

**Cool Shoes, Bogus Lyrics.** Okay, the *Keyboard* tape contest was about keyboard music, not about songwriting *per se*. All the same, when there's singing, the listener's ear naturally and inevitably focuses on it. Some musicians who are very competent in the melody/harmony/rhythm department are not so astute when it comes to the well-turned phrase. Their verbal efforts may be conceived as an afterthought: "Oh, yeah, we gotta sing something." The results can be pointless, confusing, unintentionally hilarious, or downright embarrassing.

Writing great lyrics is *at least* as hard as playing a great solo. Don't take it for granted.

**The Found Chord.** Our unofficial winner in the been-there, heard-that chord progression sweepstakes is the minor progression that goes (in C) *Cm, Bb, Ab, G*. Its cousins all seem to use bass lines that descend in steps. Most of the chord progressions in the world have already been used thousands of times by other composers, so the real issue isn't originality, it's emotional impact. Are you relying on overly familiar progressions to impart a feeling that they can

no longer convey? If you're using a well-known progression, are you doing something fresh with orchestration or voice-leading, or hoping that the progression itself will do the work?

**The Phrase Within the Phrase.** You've got a two-bar riff that's being repeated eight times, and you know you shouldn't just block-copy it. You need to make small changes every two or four bars to keep it fresh. So you do a few short punch-ins at random and congratulate yourself on a job well done. The trouble is, those small changes shouldn't be just random; they ought to mean something. Detail A ought to somehow suggest or lead toward detail B, which then grows into details C and D.

One of my (ironic) notes for this article reads, "If it's good twice, play it four times." When an idea is repeated too often without being developed, it turns stale. Yes, pop music is inherently repetitious; changing the feel just enough without changing it too much is a real tightrope act. (That's why they pay good money to players who know how to do it convincingly.)

Music — western music, at any rate — is about tension and release. One way to look at the micro-changes within the repetitions of a riff is that they ought to add tension. This can be done by altering the chord voicing, shifting the melody so that it seems to imply that it's headed off in some different direction, building the dynamics a little by adding accents to the repetitions, omitting notes to create a lack of resolution, or just adding a string synth layer

in the second eight. Pick a technique, or several of them, and then listen carefully and thoughtfully to how the long phrase develops through a logical succession of details.

**What Might Have Been.** Another of my notes for this article reads, "Failure to develop a good idea or tease out its emotional implications." Having a great musical idea isn't enough; it may be worthwhile, after you've recorded or written down your initial sketch, to sit back, scratch your head or other relevant bodily appendage, and ask yourself how the idea can be taken truly over the top. What would Danny Elfman (or whoever lights up your Christmas tree) do with this idea if it was his latest movie theme? Your music should convey a specific mood, just the way a film score does. Ultimately, the music should tell as much of a story as if it were the film itself — maybe not a Hollywood film, and not usually a specific story, but still a story that the listener can relate to without knowing the specifics of the narrative.

When you love music, as most of us do, and you're very closely attuned to how the sounds make you feel, it's easy to forget that the average listener won't necessarily or automatically share your visceral sense of excitement. The craft of composing, arranging, and recording is about making sure that your feelings get across, all the way across, to the listener. It's hard work, and a never-ending challenge.

Fortunately, along with the hard work comes the joy of listening to what you've accomplished. The joy is never-ending too. ■

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While we were recovering from Omar's comments, the intercom kicked in again. "Frank Aversa on line two."

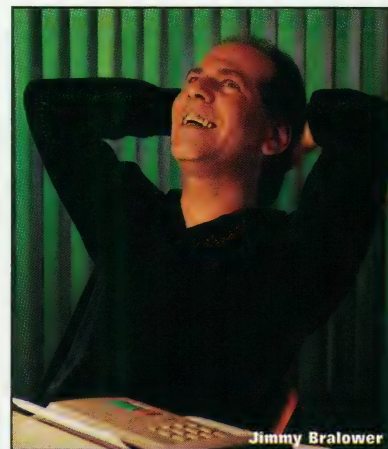
"What's the deal?" we wondered. "Frank's one of the hottest producers in the biz — he's done everything from the Spin Doctors to Burger King and Budweiser."



"I need another Servo 500, fellas," Frank said. "I already have seven, but I can't get enough of these. They sound so musical. Reminiscent of a tube amp, really smooth."

At that point, it was beginning to smell like a setup. "All right, which one of those engineering geniuses is pulling our chain now?" Just then, Sparky the marketing assistant flew into the room.

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"Get outta here," we shot back, "this is too much. Jimmy's worked with people like Winwood, Clapton, and Cyndi Lauper — he even co-wrote Celine Dion's hit single, 'Misled'!"

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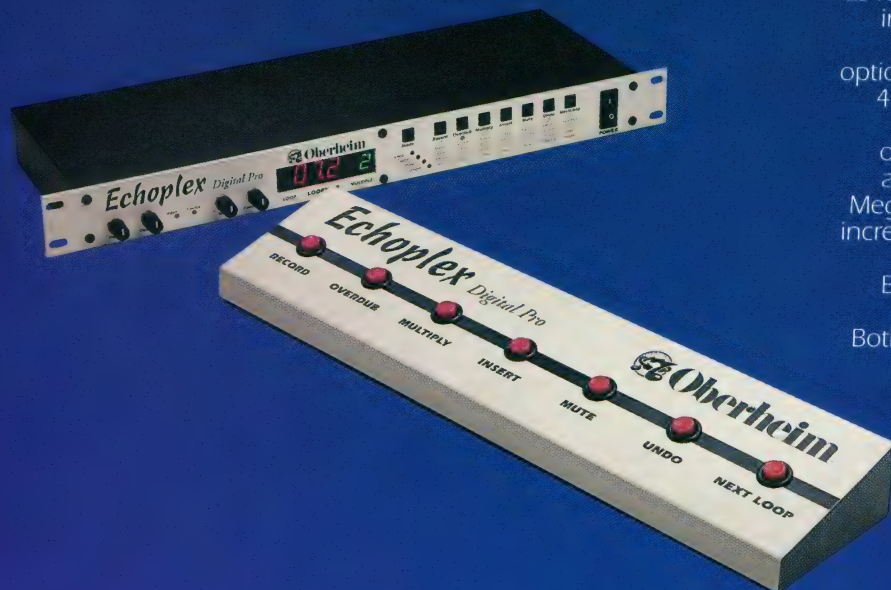
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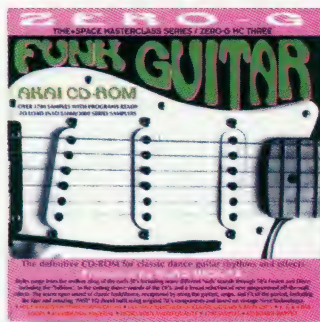


# keyboard reports

## Sounds

Reviewed by Jim Aikin, Robert L. Doerschuk, Ernie Rideout, Greg Rule, and Mark Vail

★★★★ KILLER  
 ★★★★ COOL  
 ★★★ AVERAGE  
 ★★ HO-HUM  
 ★ BOGUS



### ZERO-G FUNK GUITAR

**SOUND QUALITY:** ★★★★★  
**SELECTION:** ★★★★★  
**FORMATTING:** ★★★  
**BANG FOR THE BUCK:** ★★★★★

**Formats:** CD-ROM (Akai S1000, Roland, SampleCell), audio CD.

**Overview:** Solo guitar riffs, licks, and effects suited for styles ranging from funk and soul to rock and blues.

**Contents:** 1,500-plus tracks divided into eight categories: Rare Groove, Funk & Fusion, Crisp & Dry, Funkin' Heavy, SFX, Talk Box, Vocoder, and Pick & Mix. Tempos range from 75 to 130 bpm.

**Suggested Retail Price:** \$199.95 CD-ROM, \$99.95 audio CD.

**Contact:** Time+Space, P.O. Box 306, Herts HP4 3EP, England. 01442-870681. Fax 01442-877266. North American and Australo-Asian distribution by East-West/Sound-warehouse, 345 N. Maple Dr., Suite 277, Beverly Hills, CA 90210. (310) 858-8797. Fax (310) 858-8795.

Zero G's *Funk Guitar* has been around for a couple of years, but for whatever reasons has avoided our scrutiny . . . until now [cue diabolical laughter]. Don't let the title mislead you. Many of these licks, riffs, and effects are perfectly suited for other musical styles (blues, soul, R&B, jazz, rock, hip-

hop, techno, you name it). You'll hear motifs reminiscent of James Brown, Jimi Hendrix, the Doobie Brothers, Prince, the Jackson Five, and more. According to producer/performer Vlad Naslas: "I tried to cover as wide a range of styles as possible, from the rawness and feel of the classic '60s and '70s soul and funk, through more clinical '80s sounds, to new programmed and off-the-wall stuff."

What you won't find is musically related material played back-to-back in different key signatures (as in *Bass Legends*, reviewed May '95). A few scales are provided, but for the most part you'll need a sampler or computer editor capable of time compression and expansion if you want to use a riff in more than one key and maintain the same tempo.

How good is the guitar playing? Depends on who you ask. In addition to the usual *Keyboard* suspects who listen to review discs, a few six-string slingers from our sister publication *Guitar Player* got in on the act this time around. The most positive comments we heard from the latter were "competent playing" and "fairly authentic figures." Most of their feedback, though, (no pun intended) was more critical: "I'm not impressed," and, "Could have been played tighter, more on the money." Human looseness is what many sequence-maniacs crave, however, as long as it's not *too* loose (which this reviewer doesn't feel is an issue with this disc). ER thinks *Funk Guitar* is "a great resource for the loop freak. In the '70s," he adds, "a single guitar player would easily play this many variations in the course of a gig. Here in the '90s, each riff can be an entire song. It all sounds like the same player,

but it really grooves."

A mixture of tones and effects appears on *Funk Guitar*, from squeaky-clean to mud-caked fuzz. Wah-wah, phase shifter, filter, octave divider, talk box, and vocoder are among the effect types offered. The end of the disc offers some pulsating, rhythmic oddities, great for trance and ambient styles. A majority of the meat-and-potatoes riffs, though, seem to emanate from the same clean setup. One *GP* editor commented, "The tone is reminiscent of the perky funk sound derived from plugging straight into the board — that chirpy, dry, certainly not ampy sound that's been heard on records from Slave to Michael Jackson." No real complaints from the *Keyboard* side in terms of tone. We can think of lots of ways to take signals, especially clean ones, and twist them digitally into unrecognizable hairy monsters.

*Funk Guitar's* supporting documentation is excellent. Each track is given a name, and whenever appropriate a suggested loop point, key signature, tempo, and effects list. In all, there are 23 pages of information — quite a lot compared to most CDs we review. Also, we're told that a "Limited Edition" CD-ROM is available for Akai S3000. Containing only about 20% of the material on the full CD-ROM, it sells for the same price as the audio CD, and can be traded up for the full disc.

Okay, *Funk Guitar* may not be the *ultimate* funk guitar resource, in our opinion, but it is a darn good one. There's a bucket load of material well-suited for a variety of styles. Just don't expect to hear alternate versions of single riffs in several different keys. We'll put this one to good use, but we'll keep an

eye open for other guitar-only discs as well. —GR

### ZERO-G VINDA LOOPS

**SOUND QUALITY:** ★★★★★  
**SELECTION:** ★★★★★  
**BANG FOR THE BUCK:** ★★★★★

**Format:** Audio CD.

**Overview:** Several hundred one-bar and two-bar loops played mainly on tabla and other Indian and Bhangra percussion.

**Contents:** 60 tracks. More than 420 loops, breaks, and single hits played on dhol, dholak, ghara, tabla, chimpta, taliaan, and occasional analog percussion module. Female vocal phrases, shouted male group phrases, plus a few single notes on Asian stringed and wind instruments.

**Suggested Retail Price:** \$99.95.

**Contact:** Time+Space, P.O. Box 306, Herts HP4 3EP, England. 01442-870681. Fax 01442-877266. North American and Australo-Asian distribution by East-West/Sound-warehouse, 345 N. Maple Dr., Suite 277, Beverly Hills, CA 90210. (310) 858-8797. Fax (310) 858-8795.

A very evocative resource for the sampler owner who's in the mood for a quick trip to India. "Your grooves never need to be boring again," according to ER. The lion's share of this crisply recorded disc is devoted to 4/4 rhythm loops on tabla and/or related percussion instruments. Each track contains from four to 19 loops, breaks, and single hits that are related by tempo or instruments used. The stereo imaging is very clear, and characteristic pitch-bends, slaps, and finger-rolls abound. "Wonderfully expressive and expertly played," commented



our resident percussionist (GR). Also getting a workout on a few tracks are finger cymbals, rattles, clay pot, a one-stringed zither, and something that sounds rather like a timbale. Toward the latter part of the CD, there's a selection of hybrid loops that combine Indian percussion with TR-808, and some TR-808 patterns that are more or less in an Indian rhythmic style.

Track 40, a set of eight phrases sung by a female vocalist, has a lovely casual air. And who could resist a little kid saying, "Now the tablas"? The final track, a full-code test tone at 1kHz, is a thoughtful touch.

What's cool is that the accents in the loops don't always fall where a funk-based musician would expect them to. They open up a whole new rhythmic dimension. "I'd love to layer one of these tabla loops with a rippin' rock groove," GR commented. "I want this disc in my collection."

Almost without exception, the rhythms are pre-looped as one or two bars of 4/4. We'd rather have heard the percussionist(s) play four bars straight through; it would give the user twice as much material in a single CD, and would also preserve more of the interesting nuances of live performance. The non-looped breaks are also given twice, in this case with a silent gap between the two identical samples, which makes it easier to arm your sampler for recording. The liner notes suggest that the disc is made up for the most part of material that was collected using an Akai S1000 and a Kurzweil K2000, which accounts for the fact that the samples are already truncated and looped.

The single notes on santoor and baja are a joke: already looped (very badly) in a sampler before being recorded onto the CD. In a few cases awful thumping artifacts are actually embedded in the tone. Hoggie & The Turbinator (the developers on this project) must have dipped pretty deep into the vaults for this stuff; frankly, we doubt whether many sampler own-

ers will be that hard up for honks and twangs.

By focusing a little more narrowly than "world" percussion collections that try to cram the whole globe onto one disc, *VindaLoops* is able to provide a lot more variety for anybody who is into this particular ethnic vibe — or who actually plays bhangra music, for that matter. Considering that many of the tracks have a dozen or more samples to work from, all recorded at the same tempo and with the same drums, player, and miking, you should be able to assemble a rhythm track that has some stylin' breaks. —JA



# **ZERO-G AMBIENT, VOL. 1 & 2**

**SOUND QUALITY:** EEEEEE  
**SELECTION:** EEEE  
**BANG FOR THE BUCK:** EEEEEE

**Formats:** Audio CD, Akai 3000 CD-ROM.

**Contents:** Hundreds of synth drones and electronic FX.

**Suggested Retail Price:** \$99.95 per volume (audio CD). CD-ROM (contains both Vol. 1 and Vol. 2): \$199.95.

**Contact:** Time+Space, P.O. Box 306, Herts HP4 3EP, England. 01442-870681. Fax 01442-877266. North American and Australo-Asian distribution by East-West/Soundwarehouse, 345 N. Maple Dr., Suite 277, Beverly Hills, CA 90210. (310) 858-8797. Fax (310) 858-8795.

Trying to do convincing ambient/techno tracks without a tall stack of synthesizers? Or maybe you're scoring a low-budget sci-fi thriller. This pair of CDs should give you a big jump-start on your final mix. They're a non-stop feast of

swirling multi-layered analog/digital drones — literally hundreds of samples, most between five and 15 seconds long. The sheer variety is stunning. "They could have named this *Hearts of Space Greatest Hits*," commented ER. "It would take years and tons of gear to accumulate this collection on your own. The range of textures and moods is remarkable."

Tracks in Vol. 1 are organized in categories like Atmosphere, Synth Atmos, Ambient, Exotic Perc., Synth Bell, and Waveform. No multisampling is provided; with the pitched material, one pitch is what you get. A few of the items in Vol. 2 are multisampled, and many are pitched on a low C, for ease of tuning. Everything on Vol. 2 is electronic, as far as we could tell. Vol. 1 features a collection of acoustic noise-makers — mainly rattles, cymbals, and shakers — in addition to the synth tones. Their quality can't really compare with what you'll find on some of the newer sample discs that are dedicated to exotic percussion, but there's enough material, and it's well enough recorded, to be a valuable addition to the collection. Field recordings of bird calls and weather are also included.

The synth programming, by Ian Boddy, is very creative indeed. Filter and noise sweeps, low moans, beeping twitters, slowly spinning clangorous tones, disturbing analog blurbles, ring-mod gargling, and glassy shimmers abound. You'll also hear, in Vol. 2, a dozen or so vocoder percussion loops (all at 120 bpm) and a nasty bag of electronic percussion.

My main complaint is that I wish some of the samples were longer. Many of the stereo drones in the first part of Vol. 2 cut off rather arbitrarily, and their internal patterns of shifting pitch and timbre are so complex and inspiring that I'm left with the feeling that the musical thoughts are not finished. Ditto, in spades, for the "Metal Blow" samples in Vol. 1.

The instruments used in

Vol. 1 are not credited in the liner notes, but obviously include both modular analog synths and modern keyboard synths. Both the original E-mu Emulator shakuhachi sample and a Korg synth waterphone waveform show up, uncredited — but if you don't happen to own these instruments, you may appreciate having the classic sounds. Instruments used in Vol. 2 include Roland System 100M, SVC 350 Vocoder, and JD-990, Korg Wavestation, EMS VCS-3, Memorymoog, PPG Wave, Oberheim Matrix-6 and -12, and Akai S3000. I spotted a couple of factory patches from the JD-990 and Wavestation. Curiously, these were sampled with the on-board effects bypassed, which makes them sound rather nude. Still, some users may want dry samples, so they can add their own effects. Some of the other samples are processed with a bit of reverb, chorus, or delay, but many are dry.

These are exciting sounds. I can't wait to try a few of them out in a track! —JA



# **PRO-REC MEGA SYNTH**

**SOUND QUALITY:** EEE  
**SELECTION:** EEE  
**PROGRAMMING:** E  
**BANG FOR THE BUCK:** EE

**Format:** CD-ROM (Kurzweil K2000, SampleCell Mac and PC, Maui/compatibles, and AWE32).

**Overview:** Predominantly analog synth samples, plus dance-oriented drum kits.

**Contents:** 100Mb of synth leads, pads, vox, ambient sounds, and basses. 31 banks, 5Mb average size, none over 8Mb.

**Suggested Retail Price:** \$149.



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**Contact:** Pro-Rec, 106 W. 13th St., Suite 13, New York, NY 10011. (212) 675-5606. Fax (212) 627-3148.

The sample CD-ROM field has been evolving at a tremendous pace during the past year. Excellent sound quality and decent multisampling are becoming the expected norm. Some discs are set apart by the sheer quantity of samples they contain, others by their "ready-to-play" organization. Many boast painstaking programming that makes good use of the strengths of a particular sampler. A lot of sample CD-ROMs these days provide excellent value.

While it offers some great samples, *Mega Synth* from Pro-Rec is not one of those discs. As you might guess from the title, *Mega Synth* is predominantly filled with analog-type synth samples. From the patch names, a few classic instruments appear to provide the bulk of the sounds, among them the Roland Super Jupiter, SH-101, JX-8P, TR-808, TR-909, and TB-303, the Oberheim OB-Mx and OB-X, and the Minimoog. Sample-playback instruments are also evident, particularly among the limited set of "acoustic" and ambient sounds that are included. The resulting selection of samples covers a fairly broad palette of leads, pads, and basses, certainly enough to make the disc a serviceable addition to your collection. The drum kits have a distinctly dance orientation, and taken as a whole with the synth samples, the combination could be a good one for someone doing dance mixes.

We checked out the version for the Kurzweil K2000, an instrument revered for its dynamic filters and deep modulation possibilities. We found that only a handful of the hundreds of programs utilized the K2000's resources at all. In a few, the mod wheel or aftertouch was programmed to open a filter or to increase delay time. Lowpass resonant filters are also deployed here and there, but that's about it: no use of the control slider, and patch after patch with no

aftertouch. Basically, these banks of sounds are not very dynamic. They play back what the original sample did and respond to velocity, and that's it.

For many of the samples, this is not a major issue, as they sound fat and punchy. Even when it comes to the sampling, though, we wish Pro-Rec had done more. We spotted no keymaps in which more than three samples are multisampled across the keyboard. Fortunately, many analog synth sounds don't suffer too much when sampled only at octave intervals, but there's some pretty bad multisample matching in these keymaps — notably some of the basses and the "acoustic" guitars, which by the way were taken from synths, not the original source instruments. Most of the pads and synth strings sound very good, even when used for dense voicings. (JA expressed a wish that "Rich Strings" in the Acoustic bank didn't fade out when you try to sustain a chord.) Some of the brighter patches could easily cut through an orchestra of chain saws.

What prevents me from giving this disc a better rating is the number of problems with intonation, loop artifacts, and programs where the layers are so loud that they distort at high key velocities. While a good bit of the charm of analog synths is a certain amount of pitch instability, it's not acceptable to have multisamples where one sample is sharp or flat relative to another, or entire programs that are more than a few cents off; you'll find both problems here and there on *Mega Synth*. (For instance, "Hard Moog Bass" in the Bass 1 bank is flat, while "W Syn Bass" and "J Syn Bass" are sharp. In both "Strat Guitar" and "Sib Acstc Guitar" in the Acoustic bank, the midrange sample bumps its head against the K2000's upward transposition limit, resulting in one key — the E a tenth above Middle C — that's almost a half-step flat.)




These are not the only programming problems. In one of the drum kits, a couple of the keys pop loudly on key-up, even though the sample has

already stopped sounding. In a couple of "Dance Split" programs in the Synth 3 bank, two keys simply don't play at all, because the upper and lower limits of the two layers were not programmed to meet in the middle. Most of the loops are quite smooth, but you'll hear grunge in the top sample in "Resonant OBX" and "Rivers," both in the Synth 3 bank, and "Filter Rezz" and "Super Moog" in the Synth 2 bank. A few of the programs sound as though the designers didn't even listen to them before they shipped the disc; we spotted isolated instances of abrupt envelope cutoffs, loud clunks, and small pulse-width dropouts. All of the envelopes in the first two Bass banks are short — suitable for eighth-note disco, but not for sustained tones.

It will take you a while to figure out how many programs are on this disc, or even just to figure out where the ones you want are located. Pro-Rec provides no documentation, not even a list of the banks, much less a list of instruments used in the course of sampling. A further complication is that a large number of programs appear in more than one bank. For example, there are five banks labeled Synth, each containing 100 programs, and six banks called Analog, each with approximately 25 programs, and there is some overlap between the two. Even within a bank, there is no organization by instrument (Moog, Oberheim) or function (lead, bass, pad).

This disc would have been much better received two years ago, before CD-ROM developers started releasing jam-packed discs that took months to produce. After all, *Mega Synth* does offer a wide variety of analog-style sounds, ranging from serviceable to great. We just wish it had been produced with more care. —ER

## MASTERBITS CLIMAX COLLECTION RAPSONY

**SOUND QUALITY:**   
**CONTENT:**   
**BANG FOR THE BUCK:** 



**Format:** Mixed mode Akai CD-ROM/audio CD.

**Contents:** Rappin' and vocal expostulations by D'Imperial, Free, IZM, Jane, Denny Jones, Little Tony, Schöner, Styx, Swift, Super Jam, Kenny Venus, Thea, and J. Yoho. Also miscellaneous samples.

**Suggested Retail Price:** \$79.

**Contact:** Masterbits, P.O. Box 1411, D-27781 Wildeshausen, Germany. Fax 4431-72355. U.S. dist. by Q-Up Arts, Box 1078, Aptos, CA 95001. (408) 688-9524. Fax (408) 662-8172.

Let's see if we can figure this one out. One of the main reasons why people use hip-hop loop CDs, other than the fact that the loops just sound cool, is because they want to put together backing beats for rapping over, but they may not have the money or other resources to create a mix from scratch. The point, in other words, is to build a mix over which to do your original raps. So now Masterbits comes out with a CD that has unaccompanied raps, some as short as four rhythm-saturated lines and a few with several complete verses and choruses. With this CD and a loop CD, you could put together a rap mix in which you didn't create the music and you didn't do the rap either.

Doesn't that kind of defeat the whole purpose of doing a record? Hmm. . . . I tend to think of rapping as a very personal expression, but another way to look at a rhythmically spoken vocal track is that it's just another element to be pasted into a sound collage, no different from a sampled hi-hat loop, car crash, or polka band. Other possible uses for the CD, while not exactly mainstream, do suggest them-



selves: Maybe you have in mind a twisted satire on rap music, and you don't want to embarrass any of your rapper friends by asking them to lend their talents. So let's make a generous assumption about the likely usefulness of the material, and give the disc a spin.

The raps on *Rapsody* move right along, that's for sure. The long, angry tirades from Thea and Jane are worth hearing on their own merit; they sound like soloed vocal tracks from artist demos. The men's raps, in contrast, are mainly crude posturing, replete with references to crack pipes, women's body parts, firearms and gunbattles, rapping itself, feces, prison, Bugs Bunny, copulating with one's maternal ancestor, race hatred, digital sampling, and the Brady Bunch. I mean, do these guys know where it's at, or what?

Kidding aside, there's certainly a valid musical place for flown-in excerpts from raps. "This disc provides a great collection of rhythmic vocal sounds," ER points out. The

central problem, in my opinion, is that most of these aren't good raps. I found them more embarrassing than inspiring. The handful of European rappers on the CD are just plain mystifying. They rap in English with odd accents that could, I suppose, be intended to sound urban-American black — but how are we supposed to come to grips with a rapper who, in a Swiss (?) accent, uses the word "nigger" and the words "heil Hitler" in the same breath? Maybe the raps would be more listenable with backing instrumental tracks, but the combination of unabashed egoism, phrases drawn seemingly at random from popular culture, and casual profanity gives an impression that the disc is providing "generic rap substance" rather than anything that has real artistic merit. The fact that even the authentically black rappers care so little for what they're saying that they'll happily sell the rhymes for anonymous use adds to the impression.

Here's a random excerpt:

"We're puttin' shit together like the house that John built on a hill, 'cause this you're gonna feel like velvet, turtle. My style fits tighter than a girdle. If you hate it, then you can just leave it, like Beaver, but in a day or two I'll make you a true believer in me, 'cause like the alphabet you'll C. . . ." This free association is delivered in a bouncy tone that, quite apart from the content, certainly fails to make *this* listener a true believer. On the other hand, this listener is over 40 and seldom wears his baseball cap backwards, so possibly he's missing something important.

Also included on the disc: (1) Several dozen single words, spoken with highly attitudinal inflections. While these are obviously meant to sound way cool, they strike me as less inspired than the similar short samples on some other CDs. Still, if you can't figure out an entertaining manner in which to say "sequencer," "TR-909," "vocoder," or "reverb," or if your voice is unsuitable, or if

you don't own a microphone, you'll appreciate the selection. (2) A dozen-odd ethnic vocal snippets, seemingly recorded in the field. (3) Bits recorded off the radio, from Germany and elsewhere. No copyright notices are supplied for these in the booklet, so we're a *little* dubious about whether Masterbits is authorized to re-license them to anybody else. (4) A spiffy set of synth patterns on MC-202 and TB-303, spiced up with some very nice resonant filter moves.

According to the liner notes, you also need to pay a license fee if you release a record that uses any of the Masterbits raps — but the manufacturer tells us that this is no longer the case. If this disc were selling for \$199, we'd just laugh and toss it in the bottom drawer. At a mere \$79, though, for a mixed-mode CD that works in any audio CD player or as an Akai CD-ROM. . . . What the heck; maybe some of our readers will find a good use for it. —JA ■

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# keyboard reports

## Ensoniq KT-88

SAMPLE PLAYBACK SYNTH  
By Mark Vail

Every time we turn the Ensoniq KT-88 on, it reminds us of Mike Oldfield. That's because it always powers up with "Grand Piano" selected, which makes us think of the flip side of *Tubular Bells*, where Oldfield announces all the instruments he's playing.

Given the complement of on-board sounds provided by the KT-88, Oldfield might be able to recreate the entire *Tubular Bells* score on this instrument alone. It provides up to 64 notes of polyphony, 16-track MIDI sequencing with some of the best editing features you'll find on any built-in sequencer, a wide assortment of acoustic and electroacoustic instrument renditions, and a variety of synth sounds — all completely programmable — and built-in programmable effects. On top of that, it has one of the biggest LCDs we've seen — still only two lines by 16 characters, but the characters are nearly 1/2" in height and 1/4" wide. A contrast control would have been a welcome addition, allowing you to adjust the display for different viewing angles.

A total of 16 tracks is available for sequencing. An individual sequence offers eight tracks, and you get eight additional, song-length tracks when you string sequences together in a song. Standard memory provides room for 70 sequences, 20 songs, and 6,500 notes; an optional PCMCIA SRAM card gives you additional space for up to 140 sequences, 60 songs, and 118,500 events. That's a lot of data, but it doesn't entirely make up for the fact that the KT-88 lacks a built-in floppy disk drive. Floppies are cheaper than PCMCIA cards, but the addition of a floppy drive would add to the KT-88's cost. In addition, since PCMCIA cards are more widely available than the proprietary RAM cartridges used by older Ensoniq synths and those from other manufacturers, you can increase your synth's memory capacity at more reasonable rates than in the past. Still, as time goes by and your sequence library grows, you may sorely miss having floppy storage instead of comparatively expensive PCMCIA cards to archive all your music data.

Sequence tracks can be recorded in loop mode with new data added to what has already been recorded, or new material can replace what previously existed on a track. Auto punch-in/out and step recording are also supported. In song mode, individual tracks can be independently muted and/or transposed (to the same degree) for each step in the song. Each track can be assigned to play an internal sound, an external sound via MIDI, or both. You can edit individual notes and events within a sequence. If it's a note, you can change its velocity, du-



Bringing some welcome, if simple, improvements on what has come before, Ensoniq's new KT-88 sports a very good 88-note weighted-action keyboard, a huge LCD, a quick-transpose feature, and handily skewed performance wheels.

ration, start time, or note number (pitch). Global editing functions include copying, merging, quantization, velocity scaling, event filtering, transposition, and track shifting. You can define a group of notes to be globally edited according to bar, beat, and clock counters and within a note range. Here's a cool feature: The KT can tell you, in minutes and seconds (with hundredth-of-second accuracy) how long a sequence or song is. The KT's sequencer may not provide all the bells and whistles you get with a state-of-the-art computer sequencing program, but it's as good as, if not better than, any built-in sequencer we've seen on any other synth (except those from Ensoniq's TS line, which offer 24 tracks, one of which can be assigned as a tempo track). In any case, the KT's sequencer is capable and reasonably deep, but you should be able to learn it fairly quickly.

One of the KT's most useful features, called SoundFinder, allows you to scan through on-board patches that are in the same category as the one you're currently hearing. For instance, with "Concert Grand" selected, you can use

the Cursor/SoundFinder previous and next buttons to cycle through the KT's complement of ten pianos (including one layered with strings). The patches don't have to exist side-by-side in memory, and you can add new patches, or reassign existing ones, to any SoundFinder category. This function also works when you're in preset/sequencer mode, allowing you to quickly test similar instruments in the preset's or sequence's context.

If you find playing in a flats-laden key difficult, the KT-88 helps out with one of the most convenient key transposition functions that we've seen on a pro synth. The front-panel transposition button lets you quickly assign a key, after which you can touch the button at any time to transpose the KT-88 into that key. A row of 11 LEDs on the front panel identifies the current key. The transpose button then toggles between the selected key and concert pitch. This transposition also affects the notes transmitted via MIDI, but it doesn't affect what's been recorded into the KT-88's sequencer or incoming MIDI note data.



Depressing the transposition button while holding notes on the keyboard will cause the KT-88 to transmit note-offs for those notes that you're playing — sort of the way a panic button works, but in a more intelligent manner. (Most panic buttons send a global note-off command; some also send a note-off for every key on each of the 16 MIDI channels.) This will come in handy if you ever encounter stuck notes. And for those occasions when you need a real panic button, there's one of those too. It doubles as the General MIDI activator. As with the General MIDI implementation on Ensoniq's TS-series synths, the KT's sequencer becomes inactive when you switch the instrument to General MIDI mode, which is mainly for reception of multi-channel MIDI data from an external source. You can play General MIDI sounds from the keyboard, but most of the KT's front-panel buttons won't operate.

One of the disadvantages of having an extended keyboard is that the pitch-bend and mod wheels, if they're located at the left end of the keyboard, are almost out of reach. The KT designers addressed this problem by skewing the wheels slightly to approximate an 11 o'clock/5 o'clock angle, providing an improved arm position for your wheel movements. Ensoniq even resurrected a cool pitch-bend feature from their old ESQ-1 (see Keyboard Report, Sept. '86): Beyond the 0-12 half-step values for the global pitch-bend range parameter are the same values followed by an "H." The H stands for hold, and it means that you can bend only the notes in a chord that you're actually holding on the keyboard, not those sustained with the footswitch. We'd like to see this feature, which comes in especially handy for the "Pedal Steel" patch and is very effective on other sounds, on every synth in the marketplace.

The KT-88 descends from the SQ-2 and KS-32 (see Keyboard Reports, Oct. '91 and Nov. '92, respectively; see the SQ-2 review for details on its sequencing capabilities and the voice architecture and programmability). Besides the additional buttons for accessing all the new KT features, the most conspicuous difference between it and these other Ensoniqs is the size of their keyboards. Whereas the SQ-2 and KS-32 synths feature 76-note keyboards (unweighted and weighted, respectively), the KT-88 sports a full set of 88 weighted-action keys. That can be important for piano music, or if you insist on having the full piano range of notes at your disposal. If 76 keys are all you need, and you prefer a slightly smaller and lighter instrument and a \$200 savings, consider the KT-76, which otherwise offers an identical feature set.

Also worthy of mention: The Make Default Preset function introduced on the KS-32 has been maintained on the KTs. This allows you to quickly create new eight-part (or fewer) presets or sequences based on factory templates. You pick the one that's nearest to your needs, then (hopefully) only minor adjustments will be required for you to get the results you want.

The main thing that concerns us about the KT is its audio quality. When you listen intently to many of its patches through a good sound

system, you'll detect that every note you play is accompanied by a slight hiss. When you stop playing, the high-pitched hiss soon disappears. It sounds to us as if a noise gate opens and closes for each note. We checked the outputs of an Alesis Quadrasynth and a Yamaha W5 in the same system to verify that our monitors weren't the cause of the hiss; both of those synths sounded fine. The noise problem can't be blamed on the built-in effects, because it's still apparent when the effects are bypassed. However, it can be exacerbated by the effects. For instance, with the patch "Pop Grand," the noise floor *increases* after you stop playing. Play more notes and the noise recedes until the notes die away. According to Ensoniq, the KT-88 uses the same tone generator as their earlier KS-32, but the new synth has better output fidelity, which may expose sonic problems that weren't noticeable on the older machine. This "breathing problem" is really only noticeable when you're playing KT sounds solo.

With the KT's vast palette of sounds to choose from, it's too bad their quality isn't uniformly high. The pianos are the most disappointing. While they can speak softly with a delicate touch (dialing up a velocity-response curve that you're comfortable with helps), the KT's sampled pianos seem lifeless in the midrange and ring electronically in the uppermost range. Of the classic grands, we prefer Concert Grand, which seems to have the smoothest response across the board. For rock, there are several brutally bright pianos that will cut through wailing guitars and slammin' drums.

It always seems strange to play organ timbres with a piano action, but plenty of people play piano on an unweighted keyboard, so there ya go. Anyway, there are 20 organs in the KT, half of them Hammond simulations. Some of these aren't bad. They're well served by the decent on-board Leslie simulation. We'll refer you to last month's roundup of Leslie simulators for technical details about rotating speakers; however, it's worth noting that the KT's Leslie implementation offers almost as many parameters for your editing pleasure as the most sophisticated unit we reviewed last month, the Electro-Voice Fx70. All kinds of performance actions can be assigned to toggle between fast and slow rotation speeds, including sensible controllers such as the sustain pedal, pressure, or the mod wheel.

Electric pianos, which fare better than their acoustic counterparts, are well represented, with separate renditions of the Rhodes, Wuritzer, Yamaha Electric Grand, and DX7. These lean more toward modern than traditional, which makes sense. Why have all the internal effects if you aren't going to use them? We found playing some of these patches quite therapeutic after a long, hard day.

For ambitious classical works, or even Moody Blues covers, you get all sorts of strings; "String Section" is particularly expressive. To fill out the orchestra, there are brass, reeds, bells (yes, including the tubular kind), and percussion. While the saxes are too electronic, the brass fare better. "French Horn Sec" is particularly

## ENSONIQ KT-88

### DESCRIPTION

Sample-playback synth with built-in sequencer and effects.

### KEYBOARD

88-note (A to C) weighted-action keyboard. Velocity, release velocity, and channel pressure sensing. 14 velocity-response curves, including fixed velocities of 64 and 127; four pressure-response curves. Eight programmable zones; independent reception/transmission channels, transposition setting, and data controller assignments for each zone. 34 tuning tables, including 12-tone equal, Pythagorean, Just C, Werkmeister, three types of Greek, Turkish, four types of Arabic, five types of Java, Indian raga, 19-, 24-, 31-, and 53-tone equal, three of Wendy Carlos's tunings, Harry Partch 43-tone, and reverse.

### SOUNDS & MEMORY

211 waveforms in 6Mb of waveform ROM. 80 RAM patches, 100 ROM patches (including 20 drum kits). 128 General MIDI sounds. 6,500-note sequencer RAM, 70 presets/sequences and 30 songs. Optional PCMCIA SRAM card holds two banks of 80 patches each, two banks of sequencer memory (70 presets/sequences and 30 songs per bank; bank A holds 6,500 notes, bank B holds 112,000 notes). Compatible with any 512k to 2Mb PCMCIA SRAM card, but card will be formatted to 512k. Optional KTC-series ROM card contains 160 patches and some demo presets/sequences.

### FEATURES

64-note polyphony. 13 effect algorithms with real-time modulation, including reverb, delay, chorus, flanging, phase-shift, Leslie, compression, and distortion effects. Convenient sound-grouping and -searching facilities. General MIDI reception mode. Front-panel transpose button with multi-LED display. Optional music rack.

### SEQUENCER

16 tracks (eight sequence-length, eight song-length). Audition mode for comparing new take with previous one. Auto-punch and overdub recording. Zone quantization, track shift, controller scaling, event editing, event filtering, track/preset/song copying, track merge. MIDI clock synchronization. 96 ppq clock resolution.

### INTERFACING

Left/mono and right/mono unbalanced outputs, stereo headphone jack, single/double footswitch input, CV pedal input (all 1/4"). MIDI in, out, thru. AC power in.

### DIMENSIONS

15.5" x 55.5" x 5". 57.7 lbs.

### SUGGESTED RETAIL PRICE

\$2,695. KT-76, \$2,495. KTC-series ROM sound cards (160 patches), \$99.95 each. MC-512 PCMCIA SRAM card, \$179.95. CV-P-1 control-voltage sweep pedal, \$29.95. SW-10 dual footswitch, \$49.95. MS-1 music stand, \$49.95.

### CONTACT

Ensoniq, 155 Great Valley Parkway, Malvern, PA 19355. (610) 647-3930; fax (610) 647-8908.



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## ensoniq kt-88

### ENSONIQ KT-88

#### PROS

Polyphony to spare. SoundFinder patch-searching and -filling utility. Big LCD.

#### CONS

Background hiss noticeable in some patches. No floppy drive.

#### BOTTOM LINE

A fine instrument for live performance, but its inherent background noise may pose problems in a studio environment.

full and rewarding. "Solo Trumpet" and "Muted Trumpet" are beautiful and expressive, as are "Solo Trombone" and "Flugelhorn."

We're impressed with the KT's palette of drum and percussion sounds. There are cool kits for rock, country, jazz, and dance, plus powerful and evocative gated, brush, and synth collections. The seven factory basses aren't particularly impressive; the best are the silky-smooth "Fretless Bass" — which provides soft harmonics in the upper two octaves, where most KT-88 bass patches are silent — and "Slap Bass," which is transformed from a plucky timbre at medium and lower velocities to an ultra-punchy whap at high velocities. KT-88 guitars vary from so-so to a wow factor of 8 out of 10. "Pedal Steel" is a winner, and for balls-to-the-wall solo electric guitar, look no further than "This Goes to 11!"

On the synth side of the equation, there are nine pads and four leads. A standout pad, and quite different than any other, is "Sample & Wheel," an analogish drone with its filter modulated as if under sample-and-hold control; the mod wheel controls the filter cutoff. The leads, all monophonic and some with portamento between notes that are played non-legato, are standard fare.

If the sounds themselves don't inspire you, the controller programming in many factory patches may. Aftertouch and the mod wheel are intelligently mapped to enhance the sound. For instance, on strings and other sustaining timbres, the mod wheel lowers the amplitude as you push it forward, letting you swell its volume by bringing the wheel back down. The wheel often decreases the filter cutoff, to make the sound seem to get quieter. Pressure is sometimes used in sustaining patches to swell the volume. Cheers to Ensoniq's sound designers for avoiding as much as possible the typical use of these controllers: bringing in vibrato.

Given its 88-note weighted keyboard, obvious competition for the KT-88 comes from the Kurzweil PC88 and Yamaha's PF P-100 (reviewed in Oct. '94 and Aug. '93, respectively). The PC88 has the edge in terms of sound quality and size; we also prefer the P-100's piano sound to that of the Ensoniq. However, the trump cards up the KT's sleeve are its programmability, its diversity of sounds, and its superb sequencer, capabilities that neither of the others offers. ■

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## YAMAHA QY300

### DESCRIPTION

MIDI sequencer, auto-accompaniment generator, and General MIDI tone module.

### MEMORY

Ten songs, 100 styles x 8 patterns each, 100 user phrases, about 53,000 notes total (all RAM). 3,093 ROM phrases. 128 GM sounds, 8 drum kits (all ROM).

### FEATURES

User-programmable styles, patterns, and phrases. Fingered chords recognized by pattern generator. Non-velocity-sensing 2-octave front-panel touchpad "keyboard." MIDI input filtering. 3.5" DS/DD disk drive. Reads Standard MIDI Files on MS-DOS disks.

### SEQUENCER

Sixteen MIDI tracks, 96 ppq clock resolution, external MIDI clock sync. Real-time, step, and punch-in recording, can play internal sounds, external MIDI modules, or both. Bar/beat region editing, event editing. Track playback parameters include quantization and velocity. Accompaniment pattern, chord, and tempo tracks. Twenty-five chord types with alternate bass notes. Ten locate markers. Song chaining. Jog/shuttle wheel.

### DIMENSIONS

13-1/2" x 9-3/8" x 2-1/2". 4-1/2 lbs.

### INTERFACING

L/mono and R audio outs, stereo headphone out (all 1/4"). MIDI in, out. External "wall wart" power adapter input (12V DC, tip +, 700mA). LCD contrast knob.

### SUGGESTED RETAIL PRICE

\$1,295.

### CONTACT

Yamaha, 6600 Orangethorpe Ave., Buena Park, CA 90620. (714) 522-9011; fax (714) 522-9832.

## Yamaha QY300

### TABLETOP SEQUENCER/ACCOMPANIST

By Jim Aikin

ability to record your own rhythm patterns and styles would fill in the gap between the two approaches. A disk drive for saving your sequences and original patterns is a must, as is a decent set of General MIDI sounds. A big LCD and a friendly operating system that has some powerful editing options, yeah, let's include those too. And you say you need it to follow your left-hand chord voicings, so you can improvise songs that you haven't had time to sequence in advance? Sounds like you need a Yamaha QY300.

Yamaha isn't the only company that's out to fill this product niche. We were hoping to get a look at Roland's new RA-95 this month, but it didn't arrive in time for review. We plan to get to it in a month or two. (Promises, promises.)

**Overview.** The QY300 is sort of an uptown version of Yamaha's battery-operated QY10 and its miniature brethren: It sports the same type of front-panel "keyboard," a two-octave row of non-velocity-sensing buttons suitable for musical data entry if there's no MIDI keyboard handy. The buttons are larger and easier to play than on the miniatures, however. The QY300 is not battery-operated, but the extra size means there's room for both a numeric keypad and a data entry wheel (hooray!). The General MIDI tone generator offers a straight 128 preset sounds, with no voice programming and a barely adequate digital reverb. The 1/4" output jacks are more suitable for stage and studio than the smaller QYs' minijacks. The polyphony maxes out at 28 simultaneous notes — or fewer, if some of them are dual-oscillator tones.

The user interface is frankly terrific. The QY300 sports the biggest LCD we've ever seen on a device in this price range, and you get graphic assistance from Yamaha's mixer-metaphor display "sliders." The six soft buttons below the LCD actually line up with the menu labels that show their current functions. (That ought to be taken for granted, but both Akai and Generalmusic are still grappling with the concept.) The owner's manual is even readable. The LCD is not backlit, unfortunately; if you intend to use the QY300 in a dimly lit club, plan on investing in a gooseneck pencil light.

The cursor up/down and left/right buttons don't always take you where you want to go, and the LCD is so cluttered with graphically helpful details that you can look straight at it without even being able to spot the cursor . . . but we got used to the system pretty quickly. Tracks can be named, but the track names are only displayed when you're using the event edit screen — less than ideal. On the plus side, a row of little diamonds shows whether individual

tracks have data recorded into them; the diamonds blink on playback more or less in rhythm with the note-on messages, which does give you some visual feedback about what music is recorded on each track. The basic operating modes (song, pattern, phrase, disk, and so on) each have their own dedicated panel button with an LED, and the various functions that the keyboard and keypad buttons can have are all clearly labelled on the panel.

**Sounds.** General MIDI, not programmable. (World-weary shrug.) Many of the sounds are standouts: The string ensembles and choirs are lush, the lead synths cut, the guitars snap, and while the solo woodwinds and brass will offer no competition to a sampler and an orchestral library CD-ROM, they're certainly respectable in a device in this price range. The only real wanker in the lot: Not only is the "Fifth Lead" tuned to a fourth, each note is out of tune with itself!

The customary tricks are employed to cram 128 sounds into less wave memory. For instance, the "flute" and the "piccolo" differ only in the placement of a single multisample split point; the same wave data is used in each. Are they okay sounds? Sure. Does changing the split point help the piccolo sound more like a piccolo? Yep. (Repeat world-weary shrug.) "En Strings1" uses the same samples as "En Strings2"; the only difference is the speed of the envelope attack. They're good samples, though. The string patches can be played over more than four octaves without sounding shrill at the upper end.

The drums are remarkably punchy, especially the snares (long a Yamaha weak spot). As is becoming common with General MIDI devices, you get eight different drum kits, but there's a ton of overlap among them — only two sets of hi-hats, for example, one acoustic and one electronic. What's really a bummer is that there's no kit editing. We can live without programmable panning and individual effects send levels, but there are times when you'd surely like to tune a given drum up or down by a couple of half-steps.

The QY300's voices will respond to MIDI velocity, modulation, and pitch-bend data (though not aftertouch). All of these data types can be recorded into the sequencer as well, but the only way to create the data from the front panel is by entering single events in the sequencer's micro-edit mode. We can't help wishing they had wired up the jog/shuttle wheel to do double duty as a modulation/pitch-bender. Heck, they could even have used it for real-time velocity input when the notes are played from the mini-keys. Chalk it up as a missed opportunity.

**P**ure artistic inspiration, untrammelled by stylistic conventions, is a wonderful thing, no doubt about it — if you live on a mountaintop, where only the birds and the clouds will hear you. Most musicians are under more pressure to get the job done. Especially if you play casuals or in clubs, where you're called on to maintain a large set list in a variety of styles and have to perform without much in the way of backup musicians, the idea of a tabletop accompaniment module may be quite attractive.

You'd like it to have a large selection of built-in patterns in familiar styles, of course, but it should also have a 16-track sequencer, for those times when more originality is called for. The





*Little big noise: Yamaha's QY300 takes the QY mini-module concept to new heights with programmable accompaniment styles, a 16-track sequencer, GM sounds, and a disk drive.*

**Sequencer.** The QY300 sequencer is way beefed up beyond the QY20, which was itself a significant advance over the original QY10. Technically, it's a 19-track sequencer — 16 normal MIDI tracks, a pattern track for switching among the accompaniment patterns, a chord track that governs the chords used by the patterns, and a tempo track. The chord can be changed on every quarter-note, and can anticipate the beat; new patterns are always cued up at the downbeat of a new bar. (We'll have much more to say about the accompaniment setup below.) Each of the normal tracks can play internal sounds, an external module (on any MIDI channel), or both. The channel assignments of the 16 parts are hardwired at the MIDI input, however; there's no way to layer two QY voices on one MIDI reception channel.

The sequencer's clock resolution is 96 ppq — typical for hardware sequencers, and high enough (barely) to produce decent-sounding unquantized music. It will do punch-in recording and step recording. Simultaneous 16-channel recording is also supported, which is handy if you want to transfer some sequences from a platform that doesn't support MS-DOS disks. Accompaniment patterns and chords can be recorded in real time or in single-step mode as well; tempo track data can only be recorded via data entry. Time signatures up to 8/4, 16/8, and 16/16 are supported, and you can insert measures with different time signatures at any point in a tune.

Up to ten bar/beat locations can be entered on the fly using the mark/jump feature, and you can then jump to any location instantly during playback. The jog/shuttle wheel can be used for

real-time fast-forwarding and rewinding through a song while listening to some semblance of the music. It offers another advantage: The QY300 fails to "chase" program changes located earlier in a track whenever playback is started in the middle of a tune, but by fast-forwarding using the wheel, you can quickly locate to any spot and hear the correct synth patch.

Here's some big news: This sequencer has track playback parameters, including quantization, swing, clock shift, gate (note duration) expansion, and velocity compression! To get features like these, you'd expect to have to buy a computer and some sequencer software. For the first time that we know of in a hardware sequencer, you can try out different quantization values without losing the feel of your live-recorded track.

The basic editing jobs include all of the above, plus crescendo (velocity taper), single-pitch transposition (useful for remapping drum sounds), extraction of individual event types, and the standard cut/copy/insert commands. All of these operate on bar/beat ranges — less precise than bar/beat/clock, but better than sequencers that force you to manipulate whole bars as indivisible chunks. There's an undo/redo utility for the most recent edit.

Single tracks can be copied from one song to another — an essential utility that is sometimes overlooked by designers of less powerful sequencers. And if you've put together a pattern/chord accompaniment track that needs a little fine-tuning, you'll be happy to discover the "expand backing track" command. This turns the accompaniment into normal MIDI tracks, which use more memory but give you more con-

## YAMAHA QY300

### PROS

Sequencing, auto-accompaniment, and GM playback in one compact module. Disk drive. User-programmable music styles. Track playback parameters. Large LCD, good user interface.

### CONS

Limited GM sound set is not programmable. Real-time recording of velocity and modulation data requires external keyboard. LCD is not backlit.

### BOTTOM LINE

A real workhorse for the club musician and small home studio owner.

trol. The backing tracks will go onto sequence tracks 9-16, so (depending on how many actual tracks of accompaniment data are present in the patterns you're using) you may only have eight or ten tracks left for your original musical parts — not a big deal, since most of the factory patterns are pretty busy already.

The "expand backing track" utility is especially important because of some limitations of the pattern track. For one thing, you will sometimes hear a tiny "hiccup" in the rhythm at a bar line where the QY switches from one pattern to the next. This phenomenon is no big deal in a club situation, but if you're trying to record a high-quality demo, you're probably well advised to expand the backing tracks.

Another relevant limitation: While patterns have up to eight instrument tracks each, these tracks will always play the internal sounds. They can't be switched to local-off, the way the MIDI tracks can, so as to just play an external module. They also lack a fine-tune control and a few other parameters. Finally, we should note that the song mode mixer screen has no volume slider for the pattern track. The volumes of the pattern generator's eight tracks can of course be set individually in each "style" (a group of eight patterns). This is an easy workaround unless you happen to want to use 20 different styles in one song, in which case it's still doable, but not exactly easy. By expanding the backing track so that it becomes normal MIDI data, you gain volume control — including fade-ins and fade-outs, if you have the patience to manually enter controller 7 data — within the song sequencer itself.

Each track can be assigned its own reverb send level, with a relatively coarse setting of 0 to 8. Eight different reverb algorithms are provided, including one that gives a stereo delay in a preset rhythm. The reverb chip sounds okay, considering, but the implementation is not exactly lavish.

In event edit mode, you can step through a track and alter velocities, durations, and event times as needed. New events of any type can be inserted — even sys-ex blocks of up to 16 bytes. The QY300 gains user-friendliness points for providing an even display that shows not only the event type (PC for "program change," for instance)



but also the meaning of the data (the name of the GM program called up by that program change). It loses points for not letting you overdub mixer moves onto existing tracks in real time. In fact, the QY300 has no overdub recording *per se* except when recording your own phrases (see below), but you can easily create an overdub by mixing two sequence tracks into one.

**Patterns & Phrases.** The auto-accompaniment features of the QY300 offer not only convenience but a surprising scope for creativity. The architecture is multi-leveled, though, so hang onto your hat while we fire up the bus for a whirlwind tour.

At the highest level, you can simply use the

factory styles, which are loaded from disk but stay resident even when power is switched off. The styles included on the Demonstration Disk run the usual gamut, from "DancePop" and "House" to "Reggae" and "HrdRock," from "Rkabilly" and "BeBop" to "Ragtime" and "Fusion." Our overall impression: They're good, but not great. When you hear a string orchestra playing straight staccato quarter-notes on the root of the chord — in an upper octave, yet — in "Hrdrock1," you have to wonder exactly which "hard rock" band the style arrangers were listening to.

Individual instrument lines don't move around much; they tend to land on a note or chord and keep hammering or strumming it,

which allows you to overlay your own moving parts without worrying about harmonic clashes but also robs the styles of dynamic movement. (On the other hand, the bass line in "Rap 2" hip-hops around like Meade Lux Lewis's left hand, and that doesn't sound right for the style either.) Even when the style patterns are strung together in a song and chord changes are laid over them, they don't give as strong a feeling as we'd like of a real band.

In addition to programming the chord progression that you want the patterns to play, you can assign an alternate bass note to any chord, or get really tricky and tell the bass line to pretend it's playing a different root. The difference is that the former condition causes the bass to drone on one note, while the latter allows it to play the expected pattern, but starting on a different note of the scale. This helps add some life, although a moving bass line on an alternate root has a tendency to play non-scale tones.

Yamaha's "auto bass chord" (ABC) system can be used onstage without any advance work in the sequencer. In this mode, the QY300 reads full left-hand voicings but ignores single left-hand notes and runs, which could be handy if you want to do a few bass runs — always assuming that you don't mind hearing a full bass chord on every downbeat where the chord changes. New patterns and styles can also be called up on the fly. Calling up alternate chords and chord voicings on the fly *without* using the ABC system is a little trickier: You can pick a new root and/or voicing using the QY's front-panel keys, but the QY won't change chords until you press the ENTER key. Besides which, an extra cursor keystroke is required when you want to go from the data field where you change chords to the one where you switch from one pattern or style to another. Maybe you're agile enough to manage the extra keystrokes onstage; we'd rather have an "instant chord change" mode available, at least as an option, and maybe, since they share the same row of keys, a footswitch to toggle between choosing chord roots and choosing patterns.

Each style comprises eight patterns — two main patterns, an intro, and an ending, each of which can be up to eight bars in length, and four fills, which are limited to one bar in length. These patterns can have up to eight tracks of music data, including bass, drums, percussion, and several chording instruments. Editing the factory styles and patterns by muting certain tracks, adjusting the mix, or changing from one instrument sound to another is simplicity itself. Worth noting: There is no edit buffer for styles and patterns. If you've diddled around with the aggressive Peter Gabriel groove of "Passion" until you turned it into a hopeless mess, after which you bailed out in favor of "Calypso" or "C&W Shfl," the next time you switch on the QY, "Passion" will still be a hopeless mess. There's a certain potential for inadvertent user dissatisfaction (IUD) here.

But let's say you're cleverer than that. Delving deeper, you discover that you can assemble your own patterns from a ROM-resident library of more than 3,000 single-track *phrases*. We had lots of fun trying out different combinations of phrases — but then, we weren't trying to

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come up with a convincing jazz ballad accompaniment, just indulging in lunacy. The documentation for the ROM phrases is terse in the extreme. For example, you'll learn that there are 82 "main" phrases in the keyboard chord 8-beat category, 75 "fill loops," and five "specific" phrases, while the guitar riff 3/4 beat category contains only one "main" phrase and no "specific," "general," or "fill loop" types. What musical material is stored in each location you'll learn only by listening to it.

Fortunately, the edit screen for assembling new patterns has a solo button, so you can listen to each phrase by itself. When you do this, if you're listening closely you may discover something pretty slick: The "guitar chord" patterns are voiced intelligently with respect to the guitar neck: change chords, and the number of notes in the chord may even change.

A different phrase can be assigned to each bar of a pattern — and there's no rule that says you have to assign a "percussion" phrase to a drum kit. You can assign it to a contrabass koto, and then assign a "guitar riff" phrase to the drum kit. For that matter, you can transpose each of the eight tracks in a style into a different key. Avant-gardists, take note: The QY300 could be the ultimate weapon for Uzi-wielding Pee-Wee Herman lounge acts from hell. At the touch of a button, you can call up original styles of music that nobody has ever heard or ever *wants* to hear. And we mean that in the good sense.

If you can't find a phrase that fills the bill, or get tired of hunting for one, you can record your own phrases, up to 100 of them. These can be mixed and matched with ROM phrases to form entirely new patterns. Your phrases can contain pitch-bends and controller data, or even program changes if desired, and can be edited using most of the same commands that are available for normal sequence tracks. It seems to us that this feature is where the real power of the QY300 lies. Don't like the disco bass phrase? Record your own, save it to disk, attach it to an existing style, and grab it for auto-accompaniment the next time somebody requests "Stayin' Alive." You can even tell the QY whether your phrase is a melody, chord, bass, or drum type, which will affect the way non-harmonic intervals are treated when played back over various chord changes. And unlike earlier QY instruments, which insisted that you play the new phrase over a C7 chord — which would allow the software to interpolate your input correctly onto other chords — the QY300 is smart enough to let you play in whatever key and mode you like.

Speaking of chords, we haven't mentioned the QY's selection of preset chord types yet. Twenty-five voicings (the same as on the QY20) are supported, including such items as 7b13, 7#9, 7sus4, and m7(9). Missing: dominant 9sus4 and major 7#5. Even when the ABC left-hand chord input system is used, the latter voicing can cause a problem: Roll the notes C-E-G#-B from low to high and you'll get a straight C augmented triad. Roll the same notes from high to low and you'll get a straight E major triad, as the C will arrive too late to affect the outcome.

**Conclusions.** Like its smaller QY cousins, the QY300 is just plain fun to use. Whether you need an accompanist for playing casuals, a hotel-room scratchpad for composing on the road, or an inexpensive sequencer/tone module to turn your first multitimbral synth into a home studio, this puppy has a lot to offer. The large LCD, ten-key pad, disk drive, more sequencer tracks, and deep levels of pattern programmability give it a real pumped-up feel, sort of like giant bonsai.

We'd be more enthusiastic if the General MIDI sound set had some user programmability. Many of the instrument emulations are surprisingly good, but if you want control over the tuning of the snare drum . . . well, you get a disk drive and a big LCD. Yamaha has been doing

such interesting things with built-in multi-effects (as on the W7 synth and the MU80) that the bare-bones reverb in the QY300 is a disappointment. We also wish we got a larger charge out of the factory styles. While serviceable, they just aren't radio-ready.

Still, you're not going to get the moon *and* the stars in this price range. And if you look back a few years, it's obvious how far this type of product has come. What they can pack into a little box of plastic and silicon these days is truly amazing. If your budget is limited (and whose isn't?), the QY300 could be a very viable option. It puts a lot of music horsepower in a very convenient package, and that's what it's all about. ■

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## KAT TRAPKAT

### DESCRIPTION

MIDI percussion controller.

### MEMORY

Twenty-four user-programmable kits. Twenty-four factory kits. Thirty-four General MIDI-mapped grooves (11 melodic, 23 percussive).

### FEATURES

Twenty-four gum rubber pad surfaces 10 flat, 14 raised ridge). Multi-mode hi-hat can trigger various samples and introduce changes based on pedal position. Pad parameters include note number (one per pad), gate time (5ms to 6.4 sec), velocity curve (six choices), min/max velocity, and pad MIDI channel. Global kit functions include MIDI channel, program change, volume, gate time, velocity curve, min/max velocity, hi-hat select, hi-hat splash note, kit copy, and all-notes-off. Sys-ex compatibility for patch storage. Tap tempo control of grooves. Breath controller can be used for pitch-bend, sustain, or expression. Choice of gray or marble pad color.

### INTERFACING

MIDI in, two MIDI outs. Four footswitch inputs, bass drum trigger input, hi-hat control input (all 1/4"). Breath control input (accepts Yamaha's BC2 breath controller).

### DIMENSIONS

41.5" x 19" x 2.5". 35 lbs.

### SUGGESTED RETAIL PRICES

TrapKat \$1,199. FatKat kick pedal \$239. HatKat hi-hat pedal \$279. TrapKat Stand \$229. TrapKat Kit complete (includes two pedals and stand) \$1,958. TrapPack Kit (stand and trapKat only) \$1,428. TrapKat Rack \$179. TrapKat padded gig bag \$139.

### CONTACT

Kat Inc., 53 First Ave., Chicopee, MA 01020. (413) 594-7466; fax (413) 592-7987.

## Kat trapKat

### MIDI PERCUSSION CONTROLLER

By Greg Rule

devices for triggering MIDI modules.

If there's anything not to love about a multipad, it's the claustrophobic playing surface. Eight or ten small pads crammed into a small box do not exactly a drumset make — which is precisely why Kat decided to build the trapKat. Over three-feet wide, it's the biggest, most comfortable multipad we've played. Elbow room, at last.

Compared to electronic kits with separate pads, the trapKat is a breeze to set up and transport. Plop it on a stand or table, plug in a power cord, connect a MIDI cable, hook up a couple of pedals, and that's it. No separate cables to connect to each pad, and no individual stands and pad arms to adjust (or lose).

If you're easily spooked by things hi-tech, don't let the trapKat's size intimidate you. It is, for all intents and purposes, an enlarged, enhanced version of the company's dk10 controller. "The trapKat was designed to emulate a drumset in layout and performance, allowing a drumset player to take advantage of the power and convenience of electronics," says Kat's Rod Squier. "Simplicity was the goal. We didn't want a lot of screens and menus to complicate things." As a bonus, Kat burned 34 General MIDI-mapped grooves into the trapKat's ROM for use in live performance or practice situations.

If you'd like to see the trapKat in action (in your living room), you can order a trapKat video from Kat for \$6.95 that features drumming great Danny Gottlieb. And now, on with the show.

**G**etting Around. Those familiar with other Kat products will feel right at home operating and programming the trapKat. For others, it may take a little getting used to. Rather than using a conventional control panel with buttons, knobs, and/or sliders to make edits and so forth, the trapKat uses a combination of footswitches and the pads themselves.

There are four main modes: Kit Select, Note Edit, Kit/Pad Edit, and Global Edit. Each is selectable via a separate footswitch. If, for example, you want to change a pad's note number, press and hold the Note Edit footswitch, hit the appropriate pad, and the note number assigned to that pad will appear in the display. Continue to hold the footswitch while hitting the pad repeatedly. This will change the value, one increment at a time. A double-clicking procedure with the footswitch allows you to scroll backwards.

Figuring out what pad/pedal combination does what can take time. Each pad is numbered, but those numbers are very small and hard to see in all but the best light. Helpful hint: Photocopy Appendix B from the owner's manual and tape it to the trapKat's stand. These graphic rep-

resentations of the pad assignments eliminate the guesswork while programming.

Speaking of owner's manuals, the trapKat's is about as good as it gets. It includes an index, a glossary, lots of "how to" instructions, troubleshooting tips, a MIDI primer, and graphic trapKat templates for keeping a log book of kits.

**Kits and Editing.** The trapKat contains 48 Kpatches, called drumkits (24 user, 24 factory). The factory kits are programmed to correspond to the drum sound layouts of a variety of popular drum modules, such as the Alesis D4, E-mu ProCussion, Roland TD-7, Yamaha TMX, and so on. The user kits are yours to do with as you please. You can make changes to the factory group, but those changes are only temporary. Changes made to the user kits, on the other hand, are retained after power-down. A "copy kit" function lets you copy factory kits into user locations for permanent editing.

What's in a kit? Let's start by looking at the pad-specific features. With every kit, you can assign one, and only one, MIDI note to each pad. Since only one note is allowed, the trapKat can't generate some of the fancy stuff that the drumKat can, such as one-stroke chords, velocity-controlled crossfades, or alternating note streams. Such tricks can be accomplished externally, however, if you have a MIDI processor (such as Opcode's Studio 5) or if your MIDI module is capable of altering incoming notes. Other pad-specific functions include gate time (from 5 milliseconds to 6.4 seconds), velocity curve (six choices), min/max velocity, and pad MIDI channel.

Functions that affect the entire kit include MIDI channel, program change, volume, gate time, velocity curve, min/max velocity, hi-hat select, hi-hat splash (pedal) note, kit copy, and all-notes-off. Obvious question: Why would you need both kit and pad MIDI channel assignments? The kit-wide functions are a quick way to make blanket changes without having to reprogram all of the pads one by one. Example: Let's say you have one pad set to transmit on MIDI channel 1, another on channel 2, another on channel 3, and so on. In this scenario, the kit channel screen would display "various," since more than one MIDI channel is in use. But if you want to reprogram all of the pads to, say, channel 10, you can do so in one fell swoop by changing the kit assignment to 10. Doing so wipes out all of the previous pad assignments. Same goes for the kit velocity curve and min/max velocity settings. Unfortunately, there isn't an edit buffer, so once you make a kit edit, all of your relevant pad settings will be erased. No undos are possible.

The trapKat's global menu offers a number

**E**lectronic drums are supposed to make life easier for the drummer. Right? Easier setup, easier teardown, easier transport, easier this, easier that. But somewhere along the line, hi-tech tubs became darn near as unwieldy as their unplugged counterparts. Heaping piles of cables. Hardware strewn from stage right to left. Refrigerator-like racks. You get the picture.

Thank heaven for multipads. When these self-contained MIDI controllers came along (e.g., Kat's drumKat — see Keyboard Report, July '90), they put the ease back into electronic drumming. No more loose pads, extra hardware, or extra cables to monkey with. With a trigger-to-MIDI interface built-in, the multipad was, and still is, one of the most convenient



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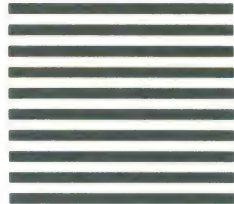
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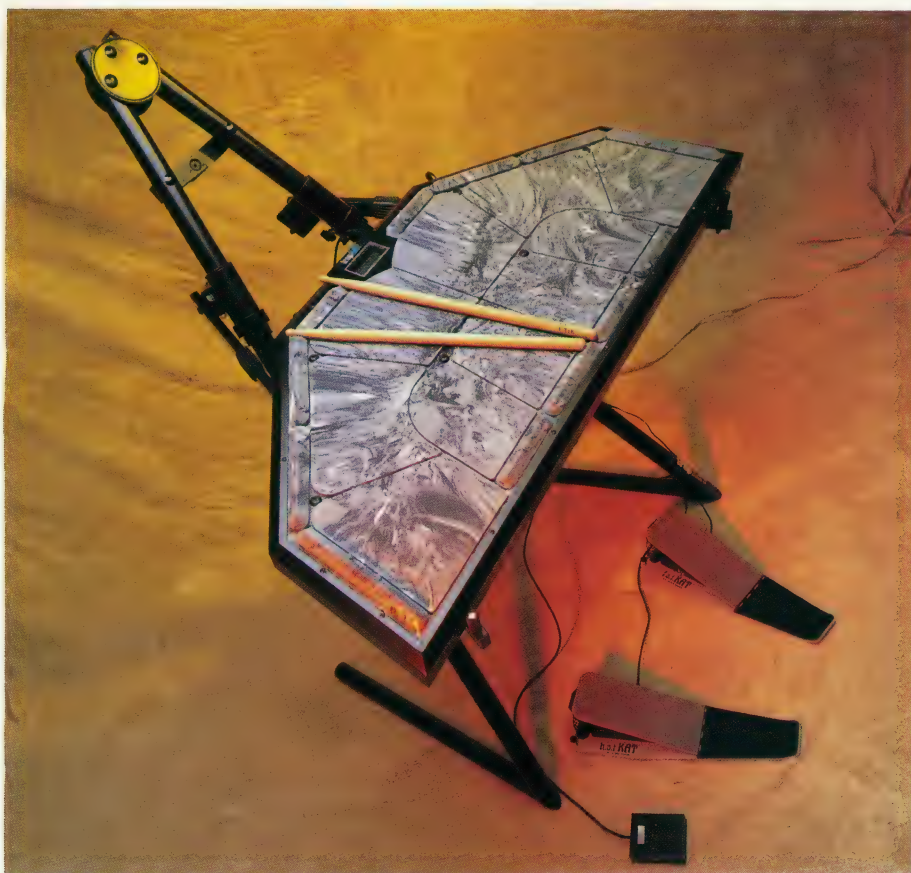
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Kat's trapKat is an enlarged, enhanced version of their dk10 — complete with 24 pressure-sensitive pads and 34 built-in grooves. The two pedals pictured here are Kat's hatKat and fatKat, used for hi-hat and bass drum triggering, respectively.

of handy housekeeping features: LCD viewing angle, memory protect on/off, internal beeper on/off, merge on/off, user or factory kit default, groove (motif) enable, restore factory presets, GM note names on/off, and more. It also provides a "pad training" mode for calibrating each pad to your own personal touch, and a cool feature that allows you to "choke" sustaining cymbal sounds just as you would with acoustics.

**Pedals & Plug-ins.** The trapKat has a pair of rear-panel inputs for bass drum and hi-hat. The bass drum options are identical to those of the trapKat's pads (note number, gate time, response, and so on). For our tests, Kat supplied us with their fatKat bass pedal, which sure looks weird but feels very close to the real thing. You can "dig into it" much the same way you can with a real bass drum pedal on a real drum head. None of this concrete block nonsense.

Since the trapKat has just one trigger input for a bass drum, where does that leave double bass drummers? It depends. You can purchase a bass pad (such as Kat's miniKick or kicKat) wide enough to accept two beaters from a double pedal, or you could link two fatKat pedals together and, thus, have both pedals trigger the same sound. For true double bass drumming, however, you'll have to sacrifice the hi-hat input in order to get your double kicks. We don't recommend doing that, though, because . . .

. . . the trapKat's hi-hat functions are excellent. Like the Roland TDE-7K kit (see Keyboard Report,

Oct. '94), this system can yield realistic results, especially when used in conjunction with a module that accepts continuous control. Separate notes can be assigned for "closed," "open," "chick" (pedaled), and "splash." The hatKat pedal looks and feels the same as the fatKat. In fact, you can use it as a bass drum pedal if you want, but it offers two additional outputs (control and footswitch).

One surprise feature: The trapKat has a breath control input that can be used to control pitch-bend, sustain, or expression. Breath control assignments are made in the global menu. Now you can incorporate five limbs into your next drum beat, if you consider your mouth a limb, that is.

**Grooves.** If you want to turn some heads at your next gig, or if you want to jam along with MIDI accompaniment at your next practice session, fire up one of the trapKat's onboard grooves. All of the patterns adhere to the General MIDI sound set, so if you're using a GM-compatible sound module, you'll be off to the races in no time.

There are 34 patterns in all (11 melodic and 23 percussive), selectable via pads 15 and 16, respectively. Several styles, instrumentations, time signatures, and lengths are provided — including Latin, rock, blues, and dance. You'll find a few click tracks as well; some are barebones (tick-tick-tick), while others include tambourines, claves, shakers, and the like.

In groove mode, pad 23 functions as a tap tempo device; hit it twice and the trapKat cal-

## KAT TRAPKAT

### PROS

More portable and convenient than electronic kits with separate components. Comfortable gum rubber playing surface. Built-in grooves are a great practice tool. Company provides regular software updates.

### CONS

No independent trigger input for a second bass drum pedal. One note per pad. All-in-one pad layout is less flexible, setup-wise, than electronic kits that have separate pads.

### BOTTOM LINE

For MIDI-based drumset applications, this is the best controller we've played.

culates the new tempo for you. The overall groove volume can be adjusted in the global menu. We must admit that the most fun we had during this review was jamming along with these grooves. They're a fun and inspiring resource for practice sessions, and the best part is that you can do it all through headphones. Your neighbors will love you.

**T**ests. We put the trapKat system (and an accompanying Akai S3000 sampler) through a series of tests: solo performances, sequencing, and live band settings. Under the sequencing microscope, the trapKat performed just as we expected it to — right on the money. No noticeable delays, crosstalk, or false triggers. We've had good results in the past using a drumKat to sequence MIDI drum and percussion parts, and the trapKat performed every bit as solidly as its predecessor in this environment.

When tested in several live band settings, however, the system yielded mixed results. It impressed us most during the delicate songs (ballads, slow blues, bossa novas, and the like). The soft gum rubber pads are comfortable and responsive. We felt more inhibited when playing raucous funk and rock songs where the dynamics rose and fell dramatically. As we built to the final climatic crescendo of each, almost always we found ourselves hitting a wall dynamically. (This is more a complaint about MIDI than a fault of the trapKat.) We had to counter this by reaching over and changing the master volume of our sampler. After playing Korg's incredibly expressive DSP-based Wavedrum (see Keyboard Report, March '95), we're somewhat spoiled; the expression possible with that instrument blows away any sampled-based MIDI percussion we've played. But let's be fair to the trapKat. The Wavedrum is an altogether different and more expensive beast, intended primarily for solo percussion applications.

One oddity surfaced during our band tests. When we played a song that required a fast sixteenth-note hi-hat pattern, the trapKat started to bounce on the stand's arms. It never came close to falling off, but something else happened: The ride cymbal (located two pads away from the



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## trapkat

hi-hat) started to misfire. We deduced that this was a result of the bouncing. It never happened otherwise. We called Kat, and they suggested we tweak the response of the ride cymbal pad, making it a touch less sensitive. This helped, but we sure hate to reduce any pad's sensitivity. Another alternative would be to Velcro the trapKat to the stand's arms.

A final note: The Kat hardware (stand) fared much better than the Roland rack system we reviewed in Oct. '94. No pads were slip-sliding away from us in mid-song this time around, thank you very much.

**Wish List.** When all was said and done, we walked away with a wish list that included just four items:

(1) Trigger inputs. We want more. Two just ain't enough for those of us who want two independent bass drum triggers, a hi-hat, and a couple of external cymbal pads.

(2) Wall wart. The trapKat itself is heavy-duty, but the supplied "wall wart" power adapter looks frail in comparison. An internal power supply and a standard three-prong power cord sure would be nice (hint, hint). Our advice to trapKat road warriors: Pack some extra warts in your suitcase before leaving town. (We'll give Kat a bonus point, though, for including the voltage specs in the owner's manual.)

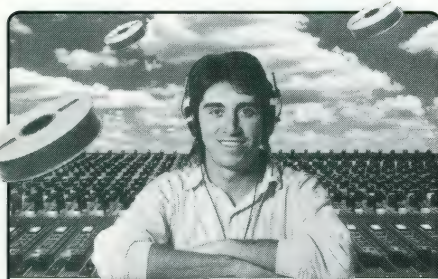
(3) Four-way footswitch. Currently, only one footswitch is bundled with the trapKat, which means you'll be leaning over the unit to plug and replug the footswitch into different jacks whenever you want to change editing modes, which is a pain in the neck — and back. A dedicated four-in-one footswitch should be mandatory with every trapKat sold.

(4) Pad finish. We don't particularly care for Kat's "marble" pad finish (see photo). It's ugly. Since so much of our time spent with this instrument involves staring at its playing surface, we much prefer the all-gray model.

**Conclusions.** Thanks to its wide body and ergonomic pad layout, the trapKat is the most comfortable and convenient MIDI multipad we've played. Compared to electronic kits that have separate pads, it's a breeze to set up and transport. Some might quiver at the \$1,199 retail price, but add up the cost of equivalent components (24 pads and a trigger-to-MIDI interface) and you'll see that it's quite fairly priced.

What's not to like about it? It could use a few more trigger inputs and more than one note per pad. But for those who desire more power from the trapKat's engine, a product called the trapKat Pro is in the works. Specifics weren't available at press time, but Kat tells us that its operating system will be more along the lines of the drumKat's, and that all registered trapKat owners will be offered an upgrade path.

As it stands, the trapKat is an excellent tool for sequencing environments, gigs with electronic-oriented bands, and so on — and its built-in grooves are a great resource for practice sessions. Next time we're called to lay down a MIDI drum-set groove, we know what controller we'll be taking to the session. ■



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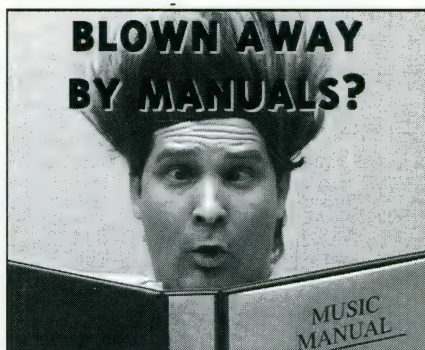
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## Opcode Overture

### MACINTOSH NOTATION SOFTWARE

By Ernie Rideout

**B**oy Meets Software. Getting into Overture is no problem. As far as basic note entry and editing are concerned, there's hardly a function, palette of symbols, or command that you can't find by glancing at the toolbar or through the menus. (For shortcut freaks: Most commands or functions can be performed with computer keyboard shortcuts, including everything from setting up a score to entering music, editing, and system layout.) The software package contains three instruction books. The first is an 80-page tutorial that you can easily get through in a couple of hours, even if you're new to the world of Macintosh MIDI software. All three were obviously written using a beta version of the program, as there are diagrams that don't correspond to what you'll see on your computer screen. Nothing that would impede your progress, however. The second book is a 500-page reference manual that covers operations on a menu-by-menu basis, with an excellent index and plenty of cross-references. The third is a useful glossary of terms pertaining to music notation, sequencing, MIDI, and software operation. An instructional video (\$29.95) is available as well that illustrates basic Overture and OMS operations.

Most notation programs have their own unique or idiosyncratic way of giving you access to the various graphic symbols required for notating music. Usually symbols are displayed in some form of palette, the standard painting metaphor for Mac software. Some programs let you configure the arrangement of symbols in the palette, and some provide multiple palettes with notes and rests together on one, articulations on another, and so on. Overture takes this latter approach, but with a twist: The palettes are pull-down menus in the toolbar (see Figure 1) that you can "tear off" and arrange on the screen as you like. This means that you can have as many or as few palettes visible as you need. Or, just access palettes on a pull-down basis and don't clutter your view.

Overture's tool palettes are nicely organized. In fact, Opcode has managed to put in functions that are not normally found in icon form, such as adding and grouping staves, and percentage scaling (which reduces or enlarges anything, from single notes to entire systems). The quantize level, which determines the smallest note value that will be transcribed from real-time input, also has its own button on the toolbar, rather than a place on a menu. I'm all for quicker access to important information such as this.

Music data entry is no different than on most notation programs. You can enter music in real time or by step from a MIDI controller, by step from a mouse and computer keyboard, or by

importing a Standard MIDI File. For real-time entry, you have the standard tape recorder-style transport buttons, with normal metronome features for your click track. Pianists note: The split point between left- and right-hand staves is fixed; you can set it wherever you like for each staff in a system, but it won't follow your performance. If your performances tend to blur the separation between hands, you might prefer this approach anyway, since you'll have to move notes from one staff to another regardless.

Overture provides several windows through which you work. Obviously, the notation window is where you see and work with notation. Two sequencer-like windows, the Tracks and Graphics windows, let you get right at the MIDI data and track configuration. As you'd expect from a piano-roll graphic window, you have full MIDI controller data editing as well. Similarly, you enter chord symbols and lyrics through their respective windows.

Overture comes with OMS, Opcode's Open Music System, which is used to control the flow of MIDI data from the computer to the various instruments in your studio. It also makes Overture compatible with multi-port interfaces. Setting up OMS is a quick process; OMS figures out what kind of MIDI interface you have, then you enter information about the devices in your setup. If you have a sequencer that uses Mark of the Unicorn's FreeMIDI to perform a similar function, you might not be able to run your sequencer simultaneously with Overture, since OMS and FreeMIDI claim your serial ports for their own use.

**B**oy Uses Software. One of Overture's welcome innovations is the multi-function cursor. With most programs, once you've selected a particular cursor or tool, you can only perform that function. Some programs have mechanisms for toggling tool functions back and forth. Overture's cursor functions differently not only according to what task you're asking it to accomplish, but also depending on its location on the page. When entering notes with the mouse, the cursor lets you insert notes when it is over an empty portion of the staff. When the cursor is directly over an existing note, the beginning of a staff, a beam or a tie, it becomes a moving tool. I found this to be timesaving and convenient.

While the cursor is flexible, it's frustratingly trigger-happy. Often I found myself transposing or moving notes when I had been certain I hadn't moved the mouse as I selected the notes. Fortunately you can select notes by dragging as well, so you don't really have to touch the noteheads themselves. Still, there ought to be a bit more

**O**pcodes Overture notation software for the Mac is the newest contender for the mid- to high-end notation throne. Notation programs can usually be located somewhere along a continuum, one end being graphics-oriented programs with minimal resemblance to sequencing software, and the other end being sequencer-oriented programs that notate whatever it is they've sequenced, but little more. Overture covers a fair portion of what would be the middle of that continuum; on one hand, you can move graphic elements anywhere you want on a page and size symbols however you want. On the other hand, it has a piano-roll-style sequencer interface that is very reminiscent of Vision, Opcode's professional sequencing program.

Overture has quite a few innovative features that set it apart from other more established programs, such as mappable drum notation and data editing that's nearly as flexible and reliable as working with text on a word processor. It's also very easy to use. Over the course of the past few months, I've used it on a couple copying jobs, and some of our *Keyboard* column music; definitely not music for the faint-of-heart. So what's the story? Well, it's not your typical person-meets-person formula. Segue to Act 1. . .



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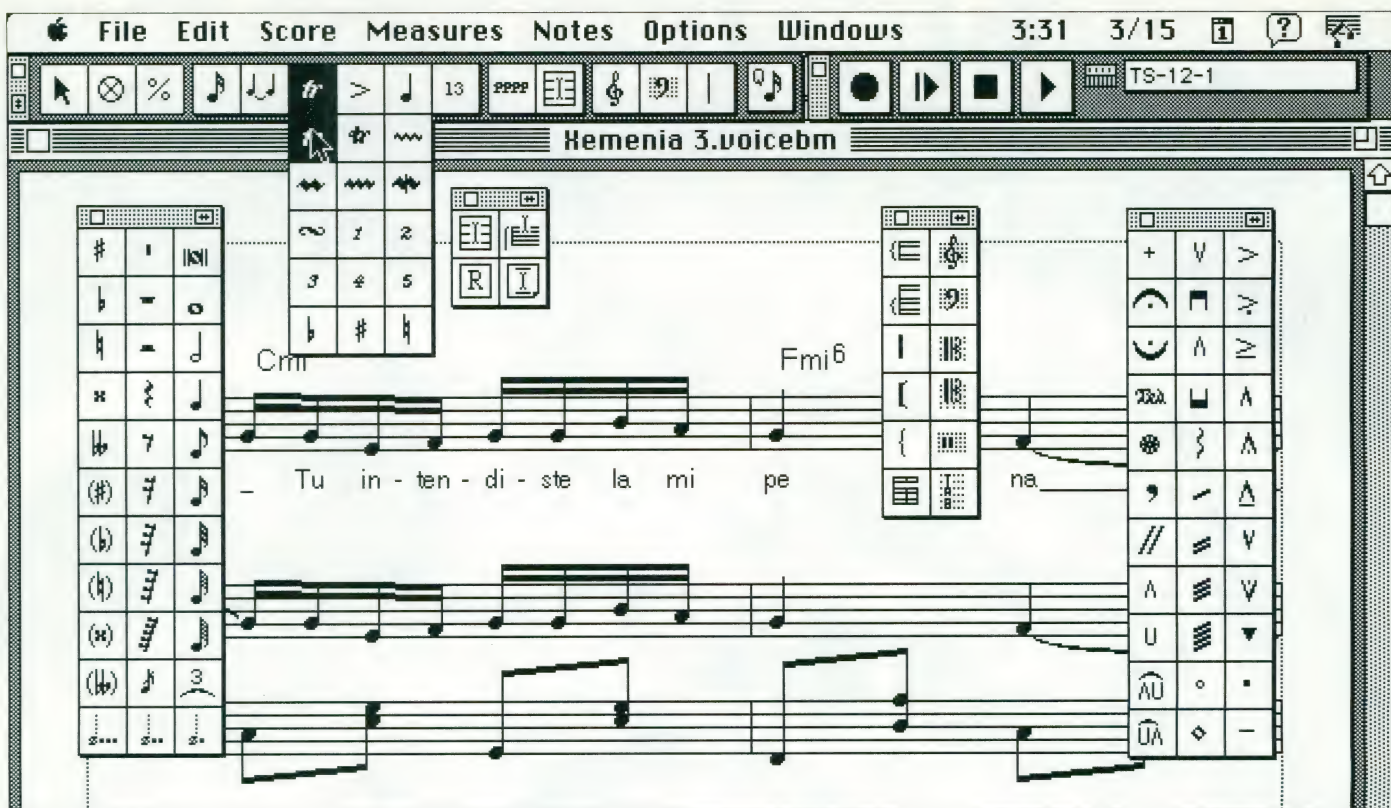


Fig. 1. Overture's tool palettes can be "torn off" from the toolbar and placed anywhere on your screen. Shown here, from left to right, are the notes, ornaments, text (clockwise from upper left: measure, system, page, and boxed rehearsal text), staves, and articulations palettes. Above them is the toolbar, and to its right are the transport controls. Playback channels for multitimbral sound sources are selected with the box in the upper right of the screen. The icons of the staves palette allow you to add and group staves. Note the lyrics in the score: An underline after a syllable indicates a melisma, and hyphens align syllables with notes.

leeway with a point-and-click interface design.

You couldn't ask for much more flexibility when it comes to setting up a score. To add staves to a system (Overture uses the terms "staves" and "tracks" interchangeably; functionally they are identical), you simply select the appropriate clef or tablature icon and click where you want it in the system. In the track setup dialog box (see Figure 2) you select the instrument name, transposition, note range, and split point for a staff. You can also select the number and location of lines per staff, great for doing percussion notation or tablature for a variety of string instruments. Select a transposing instrument for a part, and although by default the part appears in C in the score, it will be transposed automatically when extracted. Or, you can elect to view transposed parts in the score as well. To re-arrange the order within a system, open up the tracks window and drag tracks wherever you want. Staves can be any size within a given system, or even hidden completely, so small cue staves are very simple to set up.

We found a couple of bugs in the transposition department, with both part extraction and the diatonic transposition command (though not with the chromatic transposition command). First, accidentals remain attached to their corresponding notes, even if the result is incorrect (for example, a B $\flat$  that transposes up a fifth to F $\flat$ ). Second, ties and slurs do not flip direction if transposed to the opposite side of a staff, and there is no way to change them globally without selecting each one.

## OPCODE OVERTURE

### PROS

Excellent score configuration abilities. Very thorough editing features. Sequencer-like data entry. Excellent MIDI playback, including repeats. Easy to use. Automatic drum notation.

### CONS

No importing or drawing of graphic elements. Few jazz articulations. Hypersensitive mouse clicking hampers note selection.

### BOTTOM LINE

Highly recommended for anybody who can live without an extended symbol set.

Key signatures are strictly diatonic; there's no room for Bartók here. Time signatures, on the other hand, can be composite, with a main time signature and a breakdown of the groupings in parentheses. Tempo is set separately, and oddly enough, it's not found among the record controls but in the measure menu, since it can be set per measure. Although there is no global tempo setting *per se*, you can set the tempo for the whole piece or search for tempo changes you've forgotten about in the strip chart of the graphic window.

Overture's implementation of data entry is no different from what you'll find on any other

notation program, with one exception, which we'll get to in a moment. As with most notation programs, step or mouse entry is a two-step process. Select the rhythmic value, enter the note. As noted earlier, Overture has plenty of keyboard commands, so you can work entirely from your computer keyboard, hardly touching the mouse. Or enter pitches from a MIDI controller as you type single keystroke commands to select rhythm, augmentation, and rests.

The off-the-beaten-path step entry feature is how you create chord chart notation. Overture will create chord symbols based on chords that you play on your controller, and you can also enter slash noteheads and rhythmic hits easily. It recognizes open and closed voicings of basic 7th, 9th, and 13th chords, as well as inversions, which it notates as C/G, for example. I took exception to how it interpreted some more complex extensions, but as the chord library is editable, you can even teach the program to notate what you have in mind when you lay your forearm across the keyboard. Pretty cool.

**Boy Gets Real.** Real time, that is. Overture's ability to record and transcribe a real-time performance from a MIDI controller is quite good. Complex tuplets were accurately recorded and transcribed consistently. If the program interpreted your quintuplet eighths as some form of sixteenth-notes, though, using the tuplet function retroactively won't help. But if your imagination outstrips your execution, figures like this are certainly easy enough to notate with



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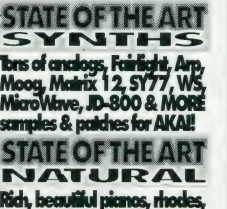
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the mouse or by step entry. The metronome options are standard: speaker click or your choice of two MIDI notes, click on count-off only, record, or playback.

Since Overture doesn't have a floating split point, two-handed piano parts recorded in real time will not automatically be notated with a clear separation between the hands. Three handy options have the potential to help you clean up your real-time mess after the fact; you can tamper with the staff, track, or voice assignment. We found a bug when attempting to use the first two options. The third works better, but involves an extra step. You can select notes and send them to the next or previous staff, or the next or previous track, which works great as long as there are no notes occurring simultaneously that ought to remain on the original track, since Overture sends everything that shares a stem but ought to be on separate staves to different voices, then select the notes you want to move and display them on a different track. Opcode is aware of this bug, and according to the engineers we spoke with, it should be fixed in the next rev.

Each staff (or track) can have as many as eight separate MIDI voices, which is mighty handy for playback over a multitimbral MIDI system. This is also essential for notating polyphonically independent parts on the same staff, as found in a lot of piano music, scholarly editions with

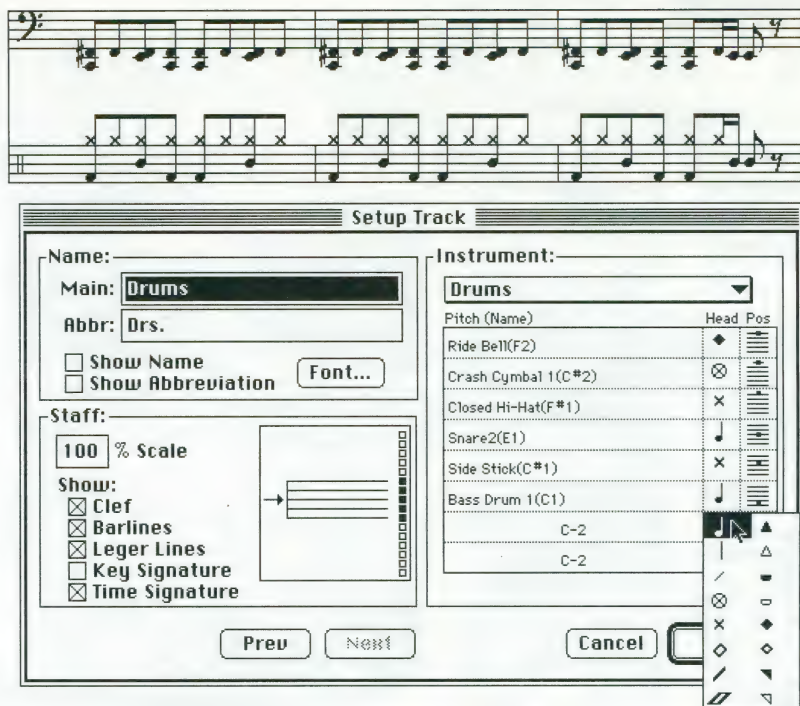


Fig. 2. The top staff shows a drum part as transcribed. The staff beneath shows the same part notated after "drums" was selected in the Setup Track dialog box, shown below the staves. Overture automatically recognized the drum map, and assigned noteheads and staff positions for each note, although these assignments can be changed in this window. In fact, you can even assign different note numbers to the same staff line, which is handy for accommodating closed and open hi-hat symbols. The percussion noteheads palette is visible at the lower right. In the Staff box to the left, up to 16 staff lines can be added or deleted, staff size can be adjusted, and various staff elements can be hidden or shown.

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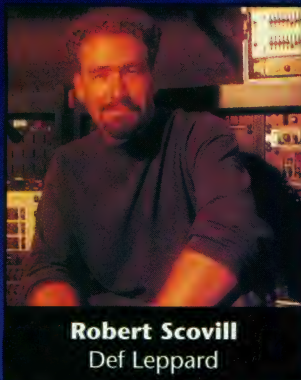
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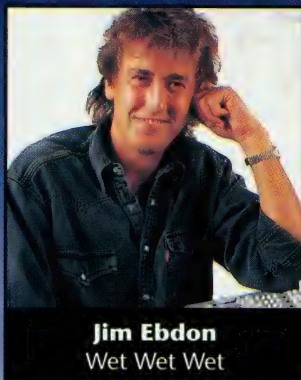
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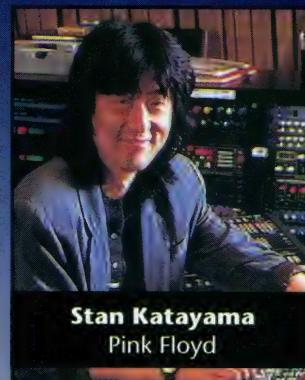
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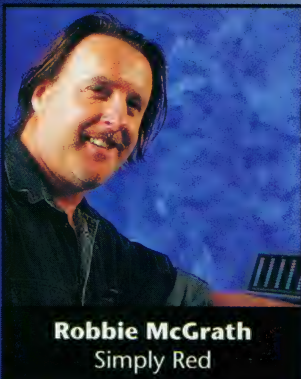
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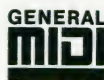
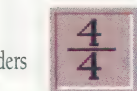
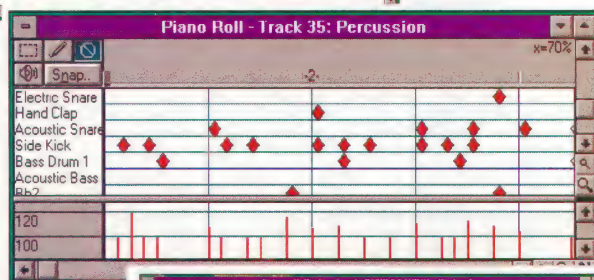
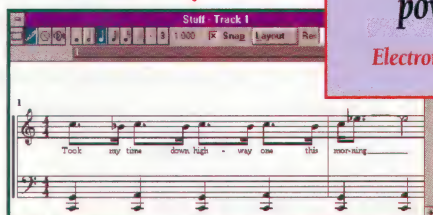
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editorial changes, and orchestral parts with cues. The first rev we worked with gave us problems when recording in real time into voices 2 through 8; we were unable to duplicate the problems with the current shipping version. Step entry and mouse entry gave us no trouble at all in any voice. When recording in multiple voices, though, there is no automatic offset for overlapping noteheads, which means you're in for a bit of dragging afterward.

There is no real-time or step record mode that merges new data with old; recording additional material in the same voice of a staff will erase the previous material (you can paste-merge, however). Other than that, real-time recording with Overture is wonderfully sequencer-like. It plays back all previously recorded music over MIDI as you record new music, an excellent feature if you use your notation program to compose, or if you'd like aural confirmation of your notation. Not all notation programs have this feature, mind you.

**Boy Changes Music.** Some of Overture's more outstanding achievements are in the editing and page layout categories. Other than the fact (mentioned earlier) that the cursor tended to drag selected notes without one's approval, Overture's implementation of symbol, measure, and staff selection is among the best we've seen. You can select anything in a score, in any contiguous or discontinuous combination, whether notes, measures, or entire parts. You can select entire measures by double-clicking, entire systems, entire staves, and entire parts the length of the score. If you open up the graphic (piano-roll) window, you can select every occurrence of a specific note throughout a score with one move.

Opcode has taken a few common problems inherent in transcribing MIDI recordings and provided automated solutions for you. For example, when you record a staccato passage of quarter-notes in real time, you often end up with sixteenth-notes followed by rests, instead of the quarter-notes with staccato articulation markings you had envisioned. In this case, you'd simply select the offending passage, and pick "staccato" from the "notate as..." menu. Presto. (See Figure 3.) If there were notes among those that you didn't want to be notated as staccato, simply delete the dots with the eraser tool, and you'll still have the quarter-notes. You can do the same for arpeggios, trills, turns, and swing-eighth jazz notation. The trills assume that you want a diatonic upper-neighbor trill, however, no matter what you actually played. No big deal, since it's easy enough to add an accidental from the ornaments button afterwards.

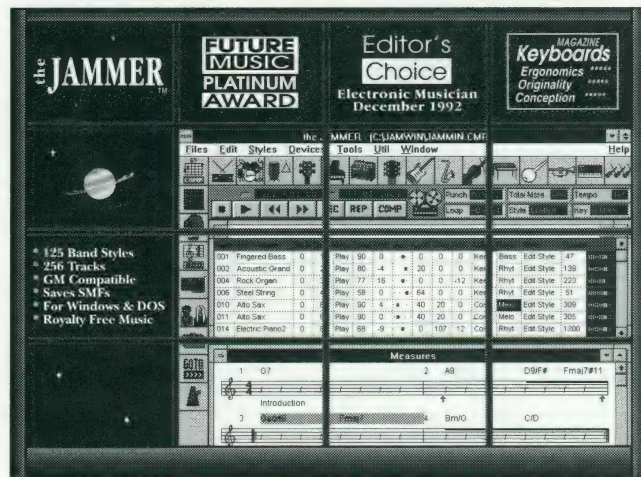
You can also apply articulations to selected groups of notes even if they aren't contiguous, a real timesaver. Just make sure you don't have any rests selected, though, or they will sport provocative articulation marks as well. Overture provides an adequate supply of articulations, even compound marks such as cap accents with tenuto and staccato marks. Not only is this handy, but it also helps you avoid the inconvenience of superimposing articulations, which Overture does if you apply two marks to the

same note. In the case of bowings, this will be unavoidable, but the fix is to simply drag one symbol above the other as you enter it, before releasing the mouse button, or drag it after the fact. Slurs and ties are Bezier curves in Overture; slurs have four handles, ties have three. Slur line width is not editable. Other nice articulation touches include organ heel and toe indications, comma and caesura marks, and optional MIDI playback of tremolos.

Notehead options are plentiful as well. You can change standard noteheads to any of the following symbols with a single click: invisible, thin slash, percussion (x inside a circle), open or closed rhythm heads (diamond and x), open or closed

slash heads (thicker than the previous slash), and open or closed shape-note heads. The notation options for dedicated percussion parts include everything on the notehead palette except shape notes, plus the following open and closed noteheads: ovals, triangles, angled triangles, and several sizes of diamond. Overture's drum notation is pretty spiffy, and we'll have more to say about it later. Grace notes are offered on the noteheads palette, and you apparently can notate any value as a grace note. Unfortunately, we were not able to get the feature to work at all when we needed grace notes going into the first beat of a bar. They were either placed in the previous bar and couldn't be dragged to the proper bar, or all

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Fig. 3. The first measure displays staccato notes as transcribed from real-time input. For the following bars, the notes were selected and "notate notes as . . . staccato" was selected from the Notes menu.

noteheads ended up on a single stem.

Another notehead option is tablature numbers. Overture offers tablature pretty much only as a notehead option; there's no automatic transcribing and no linkage between standard and tab staves. You can have tab for instruments with up to 16 strings, but the default tab staff adds a sixth line on what would be Middle C. First, you input notes in the correct rhythm on the staff lines corresponding to the strings the notes would be played on. That means that for every note on the low E string of a guitar, you'd play a middle C; for notes on the A string, you'd play a corresponding number of notes on E above middle C, and so on. Once the rhythm is done, select the correct fret numbers and replace the noteheads by clicking on them. Not exactly a musical approach, but considering that you can just as easily do tab for bass, fiddle, lute, and banjo as guitar, it's nice that it's there. We did, however, run into a bug when printing out tab for instruments with fewer than five strings: Bar lines remain at the five-line height, sticking up above the top line of tab. Serious rock guitar transcribers will be disappointed to hear that there is no provision for creating graphic elements to indicate string bends. The manual indicates that it is possible to paste PICT files into Overture, but we were not able to make it work. Opcode engineers tell us that it's on the wish list for the next rev.

**Boy Moves Music.** When it comes to system and page layout, Overture is just about as easy to use, and as reliable, as a good word processing program. Using the "wrap left" and "wrap right" commands, we flowed measures from one system to another and back, and from one page to another and back, and never lost the placement of any of our stem directions, articulations, slurs, or text. These two commands, by the way, are a tremendous feature. Wrapping right will send the last measure in a system to the next system, reflowing all subsequent systems but leaving the original system with fewer measures and more space. This does disturb the layout of the rest of the score, but you can restore it by wrapping a subsequent measure back into its original system. If you have a particularly dense measure in a system, just wrap right until it's the only bar in the system, if necessary. You can adjust the relative spacing of measures within a system by showing "handles," which are little boxes above each bar line. Overture preserves the relative spacing of the notes within each measure as you drag the handles. One complaint about handles: They only appear on the top line of a system. In an orchestral score, you may have the winds hidden for many pages; if you need to adjust the bar lines, you'll have to show the flute part, make your adjustment, then hide it again.

You can do anything you want with indi-

vidual systems, such as indent right or left. You can even drag systems side by side, if they're short enough. Staff spacing can be adjusted globally by the number of ledger lines between staves, or staves can be adjusted manually. Manual adjustment can be per system, per page, or global — the latter are accessed by pressing the option or control keys (respectively) as you drag. If you have a page layout scheme that's peculiar to your way of working, save it as a template, and it's there for every new document, even when you import a MIDI file.

Overture gives you many options for note spacing. If you're generally happy with the default spacing but just need to tweak a few bars, each measure has a "beat chart," which provides one handle for each beat. Dragging the handles moves the location of the beats but preserves the proportional spacing of the notes between them. This is a great alternative to just grabbing individual notes and dragging them, which is a desperate act, at best.

Beat charts adjust spacing as defined by the current "allotment table," which determines the minimum space a note takes up. A space is equal to the distance from one staff line to another, and any notes can be set to soak up from one to 16 spaces in .1 increments. You can save and load allotment tables (there are three provided), so if you teach a range of students, say from sixth grade up through high school, you can have one spacing setup for the beginners that has larger spaces between sixteenth-notes, and one for the more advanced kids that's more pleasing to the trained eye. Plenty of control for pro-quality notation, we think.

While you can specify the space that your

Fig. 4. Overture's printed output, seen here at 2400 d.p.i. from an EPS file captured by Overture's built-in screen dump utility. You can select any area of your screen for dumping, and save the new file in TIFF or EPS format.



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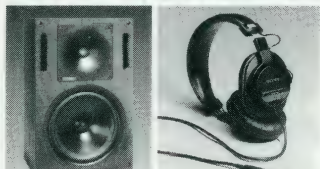
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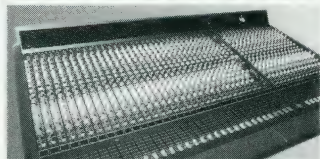


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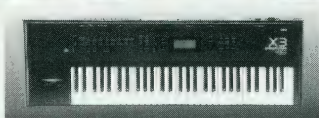


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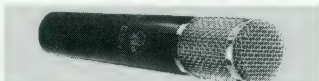
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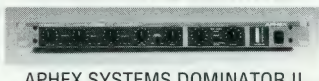
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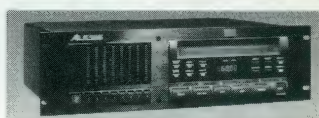


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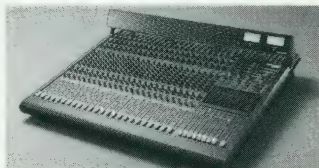


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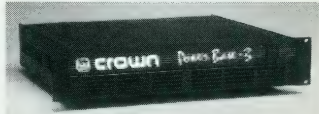
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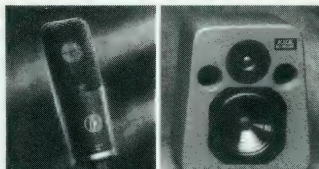
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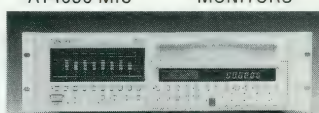


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## opcode overture

sixteenth-notes will take up, though, you can't do anything about the space that your accidentals need, other than drag them or respace a piece measure by measure. I know of no program that does, however. No fault of Opcode's, but rather a request to notation program developers everywhere: How about a warning feature that refuses to print parts unless every accidental that is superimposed over the note before it has been rendered legible? I've seen too many rehearsals complicated by hazardous parts from too many lazy users of too many different programs.

To help ease the proofreading process, Overture provides some innovative features. First of all, you will experience few or no interruptions in playback or screen redraw as you listen to a multi-page score. On our Quadra 650 with a Radius Pivot monitor, we could see the first measure of a page as it began playing, and by the time the cursor got to the end of the bar, the entire page had redrawn. (By the way, Opcode informs us that they've had reports of compatibility problems between Overture and early versions of the Pivot system software; the only problem we had was that the current document window would not resize correctly after we turned the monitor.) You can even view multiple pages at once. This kind of playback ability is unusual in a notation program that offers this much graphic control. Second, the measure and page location and zoom controls are in the lower left of the score window, so you can quickly select a magnification level or specific measure or page. You can even fill the entire screen with a particular area by dragging over it as you hold the option key.

While we're on the subject of playback, Overture will play back any configuration of repeats, multiple endings, *Da capo*, *Dal segno*, *Coda*, and *Fine* symbols that you throw at it. Just drop them in, and playback is automatic. Wow.

**Boy Learns More About Software.** Naturally, one cannot live by music alone; you need lyrics and chords, too. Overture's lyric input feature is nothing short of excellent. Just type in your text (or create it in a word processor and import it), make sure you follow the rules for breaking syllables and allowing melismas, and your lyrics will flow perfectly. You also have control over the type font, size, and vertical spacing of lyrics. While the regular paste command works with notes, pasting lyrics and any other text is handled through the "paste special" menu. We found that this worked great for everything except lyrics, which we were unable to paste at all.

Chord input is handled through a dialog box in which you specify the chord root (and bass note if different), and then select the chord type from a checkerboard-like chart of which you can view only a few rows at a time. The default chart is not organized in any logical fashion, other than that the first chords are fairly "common" and things seem to get a bit more complex as you go through the list. Finding the chord you want this way can be really frustrating, but Opcode to the rescue. You can configure the chart so that the chords you use most are visible right off the bat. Heck, you can even specify chord terminology, the sym-

bols you prefer (great for major 7th chords), and the layout of individual symbols within a single chord symbol.

Importing Standard MIDI Files works well, unless they have a lot of parts, or are large, in which case you'll want to allot more RAM for Overture. The coolest thing, though, and this is way cool, is how the program handles drum and percussion parts. If a drum part follows the General MIDI drum map, Overture recognizes the drum sounds the track used and sets up drum notation automatically for you (see Figure 2). You can select any percussion notehead and staff line for each percussion sound, or use the default ones, with which we have no complaint whatsoever. Of course, it'll do this for drum parts that you play in yourself. In fact, if your drum sound source follows a map other than the GM map, you can load in a Roland JV-80, E-mu Proteus, Alesis HR-16, or Korg M1 map, or create your own. Very impressive, and about time. Our resident drummer, Greg Rule, said, "Finally, a program that didn't forget about drums."

### Last Act (Can't Use That Other Word Here!).

Opcode has a winner with Overture; it's sure to be a major contender in the rather glutted notation software market. The degree of integration between graphic precision and freedom on one hand, and sequencing convenience and power on the other, is remarkable, but not surprising. After all, the program contains a stripped-down version of Vision, Opcode's highly regarded sequencing program. The solid, word processor-like operation of Overture is due no doubt in part to this foundation. When it comes to throwing measures and systems around in an effort to get a score and parts that read well, you can't beat having this kind of dependability.

Overture's features go way beyond the good foundation it inherited from Vision. Drum notation, the application of articulations throughout a large note selection, playback of repeats, the ease with which small cue staves can be created and unused staves hidden, and spacing and layout options are among the many factors that make Overture a program that all users of professional notation software must look into.

If you're into writing big-band charts, though, you'll be disappointed to find that Overture has few articulation symbols that are peculiar to your style, even though the program will transcribe your swung eighths as straight eighths, if you wish. Avant-gardists and guitar music transcribers will be severely limited by the lack of drawing tools and graphic importing. Overture seems to have been designed for traditional composers and traditional ensembles, even 20th-century ones, but particularly those in the education field.

Overture is easy to use, it works smoothly, and the printed output looks great (see Figure 4). There are several popular notation software packages that are not as flexible, accessible, or reliable as Overture, and if you use one of them, by now you know what we mean. If you'd rather fight than switch, by all means, keep on fighting. Otherwise, you owe it to yourself and your scores to seriously consider Overture. ■



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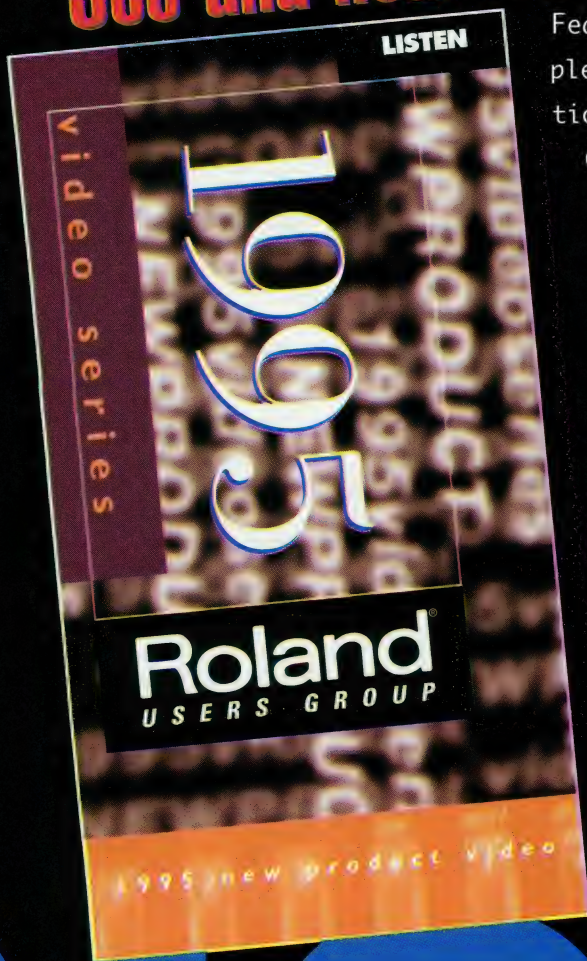
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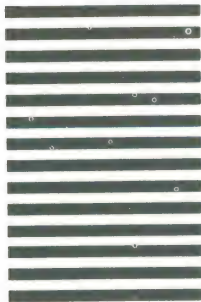
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## Clavia Nord Lead

### VIRTUAL ANALOG SYNTH

By Mark Vail

**T**here's a new love in our lives — or at least those of us who crave analog synths. It comes in the form of a small, 15-pound polyphonic synth from Sweden: the Clavia Nord Lead, distributed by electronic drum manufacturer ddrum. Like any love object in the real world, it's not without blemishes. But there's a lot to adore about the Nord Lead.

The most important aspect of any synth is its sound, and the Nord Lead easily scores an A+ in that category. It can produce aggressive, beautiful, haunting, technoid, arpeggiated, wild, you-name-it analog synth sounds. However, it's important to realize the Clavia Nord Lead isn't an analog synth; it's digital. But, unlike 98% of the digital synths currently in production, it isn't a sample-playback instrument. Like the Yamaha VL1 and Korg Wavedrum (see Keyboard Reports, June '94 and March '95, respectively), the Nord Lead produces sound using a "modeling" technique (see "The Next Big Thing," *Keyboard*, Feb. '94). The Clavia folks refer to the process as "virtual analog synthesis." Their engineers analyzed a number of analog synths and developed a mathematical model that simulates a polyphonic analog synth with two oscillators per voice, two LFOs (one that can produce sample-and-hold effects, the other capable of serving as an arpeggiator), ADSR envelopes for the amplifier and filter, and a multimode resonant filter. The modeling process itself may seem like voodoo, but never mind that. It works. This synth sounds great — that is to say, convincingly analog. Maybe even better.

Nearly as important as sound quality is a synth's playability. With 26 knobs and the same number of buttons that you can twiddle and toggle in real time to your ears' content, the Nord Lead gives you hooks to "play the sound" as well as the keys. Response to knob adjustments is very smooth as well; you won't hear a stepped response the way you do on many sample-playback synths, or the kind of noise crackles that emanate from the dirty pots on an ancient analog beast.

The Nord Lead's knobs function just the way you'd expect them to, and that's a beautiful thing. All of the knobs, except the master level control, transmit MIDI controller data, so you can record your knob-playing into a sequencer for subsequent editing and playback. Likewise, many front-panel buttons transmit controller data.

**Overview.** The base-model Nord Lead is a four-voice machine that comes in two flavors: a four-octave keyboard version for \$2,395,

or a rack-mount module for \$1,995. For an additional \$695, you get eight more voices plus a PCMCIA memory card slot. Our review unit was the keyboard model with the voice expander. We can't imagine living — okay, playing — without the full 12 voices of polyphony, and wouldn't care to have all the synth's knobs and controllers tucked away out of reach in a rack of gear. It's best to have the controls right there with the keyboard.

Those prices are pretty steep. However, you have to consider, first, that you're dealing with a new music technology, and one that's been executed fabulously well. Then take a look back at what you had to pay 20 years ago for a then-state-of-the-art synth like the Oberheim Four Voice or Sequential Prophet-5, each of which cost about \$4,000. Given these facts, perhaps the Nord Lead's price isn't out of line; it's just reasonably expensive.

We aren't wild about the Nord Lead's synth-action keyboard, which seems tight and springy. Over time the action may break in, but we don't appreciate the way our fingers sometimes bounce off the black keys. Speaking of the black-and-whites, instead of being disappointed at only getting 49 to play with, we appreciate the compact size that the truncated keyboard makes possible. (The Minimoog only has 44 keys, but it's nowhere near as portable.) Another way to look at it is, if you're playing bass synth lines, four octaves pretty much covers the required ground; and if you're playing rhythm or lead lines, the bass player in your band (as well as everyone else in earshot) will applaud the fact that you may not be able to jump down to the low range and interfere with the bottom end that he or she is pumping out.

The Nord Lead communicates visually with the performer through a double-digit LED display and 48 individual LEDs. You get no fancy LCD, but then one of those would seem out of place on what acts like an analog synth. Internal memory provides 99 patches, only the lower 40 of which are user programmable.

Along with patch increment/decrement buttons, there's a manual button that sets the current sound according to all the existing knob positions. (You might consider this the hundredth patch.) Four bank buttons, labeled A-D, access the same 99 patches, allowing you to preset a specific patch in each bank for immediate access during performance. In addition, you can use the bank buttons to layer up to four patches — provided you have the necessary voices —

## CLAVIA NORD LEAD

### DESCRIPTION

Virtual analog synth.

### KEYBOARD

49-note (C to C) synth action with velocity sensing.

### MEMORY

99 patches (59 ROM, 40 user RAM). Optional 64k PCMCIA card can store 100 performances and 297 patches (expansion upgrade required).

### FEATURES

All-digital sound production. Two virtual analog oscillators, each capable of producing triangle, sawtooth, and variable-width pulse waves; osc 2 can also generate noise. Hard sync, FM, and pulse-width modulation. Real-time knob and switch control of sound. Amplitude and filter envelope triggering via MIDI notes. Timbre control via MIDI velocity data. Four-voice layering. Four-channel multitimbral operation. Multimode resonant digital filter. Two LFOs with dedicated attack/decay envelope. Sample-and-hold and arpeggiator. Polyphonic portamento. Octave-shift buttons. Mono, legato, polyphonic, and unison voice modes. Metal cabinet.

### INTERFACING

Left and right unbalanced outputs, stereo headphone jack, CV pedal input (all 1/4"). MIDI in, out. Attached, ungrounded 5' power cord.

### DIMENSIONS

34" x 10-1/2" x 3". 15 lbs.

### SUGGESTED RETAIL PRICES

Four-voice keyboard version, \$2,395. Four-voice rack-mount version, \$1,995. Eight-voice expansion upgrade w/PCMCIA slot, \$695.

### CONTACT

Clavia DMI AB, Box 42 14 102 65, Stockholm, Sweden. +46 8 643 34 80; fax +46 8 644 26 50. U.S. dist.: Armadillo Enterprises, 5115 West Knox St., Tampa, FL 33934. (800) 793-5273, (813) 881-0597; fax (813) 881-0964.

across the keyboard. The bank buttons are accompanied by LEDs that indicate which banks are currently active. The blinking LED is the one whose patch can be edited with the front-panel knobs and buttons, which means you can tweak each patch in the layer while you play. (Keyboard splits aren't possible, by the way.)

As soon as you move a knob, the value of





Clavia's Nord Lead, available in the keyboard version shown here or as a rack-mount module, has panache-plus, thanks to its killer analog sound and performance controls. It looks like a cross between an Oberheim Two Voice synth and a Vox Jaguar combo organ.

its parameter jumps to the new setting. Your real-time edits aren't stored until you save the patch, so you can twirl the knobs and punch buttons freely without messing up what's in memory. However, there is no compare button. To restore the patch you'll need to recall it using a program change from an external MIDI controller, or else step to another patch in memory and then return to the one in question.

Each bank has its own assignable MIDI channel, for both reception and transmission. The Nord Lead will readily function as a four-voice multitimbral synth with dynamic voice allocation, the voices shared across the active MIDI channels. You have no control over the priority of any voice or channel, so voices are stolen on an as-needed basis. In most cases this process is handled silently, although on one or two occasions we heard a few subtle pops in the output signal as voices were silenced for new notes in a layer.

The currently active bank in a layer determines which MIDI channel the Nord Lead will transmit on. Say you have banks A and C active in a layer, with bank A assigned to channel 1 and bank C on channel 3. The keyboard will transmit on channel 1 as long as bank A's LED is blinking, and it will switch to channel 3 when you hit the bank C button.

Provided you have a formatted 64k PCMCIA RAM card in the slot of a memory-expanded Nord Lead, you can store a layer or multi-channel setup as a "performance." You can reportedly store 100 of these on such a card, along with 297 single-voice patches. According to the Nord Lead's manual, each performance includes the data for each patch, so you don't have to store these objects separately. (We didn't have a card, so we weren't able to verify this.) On-card performances can be accessed sequentially from the front panel, or selectively using bank-select messages and program changes from an external MIDI controller source; the MIDI channel for reception of this data is separate from those of the individual banks. If you don't have a card, you can only store a performance setup via MIDI system-exclusive dump. Otherwise, the performance in memory will vary as you change what's assigned to the Nord Lead's four banks. Thank-

## CLAVIA NORD LEAD

### PROS

Terrific, compelling analog synth sounds. Real-time knob and MIDI control of the sound. All parameters/knobs programmable for velocity response.

### CONS

No aftertouch. Footpedal mirrors mod wheel actions. Arpeggiated notes aren't transmitted via MIDI.

### BOTTOM LINE

A sweet, ballsy, expressive synth. Expensive, but worth working some overtime so you can afford it.

fully, bank assignments are maintained when you turn the Nord Lead off.

**Performance Controls.** Among the Nord Lead's controller complement is the downright best pitch-bender we've ever encountered on a synthesizer. Called a "pitch stick," it's a rectangular piece of wood with an indentation on top for your finger. The pitch stick floats on a comfortably stiff spring — that is to say, it has just the right amount of resistance to side-to-side pressure from your finger or thumb. And there's no dead zone in the center of its travel, the likes of which you typically encounter with a wheel, joystick, or lever. Using the Nord Lead's pitch stick, you can generate a realistic vibrato, or an unrealistic one if you'd like. The pitch-bend range defaults to covering a full octave. You can set the range to one of nine settings: two, three, four, five, seven, or ten half-steps, or one, two, or four octaves. (Too bad this parameter is global, instead of being stored independently with every Nord Lead patch. However, the pitch-bend range is stored independently with each performance saved on a PCMCIA card.) Even at the coarsest bend range (four octaves!), the Nord Lead's pitch drifts smoothly — stairstep-free — in response to stick movements. Over MIDI, pitch-stick motions re-

sult in the transmission of bend data ranging from 0 to 127 (64 is normal pitch; like most synths, the Nord Lead only alters the most significant data byte when transmitting bend information, which means the data isn't as precise as it might be). Former *Keyboard* art director Rich Leeds (now doing the same task for our sister publication, *Guitar Player*) found plucking the stick and letting it vibrate freely a fun pitch-bend technique; our MIDI data scope showed bend data continuing to bounce between 63 and 65 until the stick came to a halt and the value stopped at 64. We're absolutely sold on this unique pitch-bend device, and it's gonna be hard going back to our previous favorite, the Moog-style wheel.

If you position your left hand past the left end of the Nord Lead's keyboard so that your index finger rests on the pitch stick, your thumb will find an unusual Moog-style mod wheel. It's very thin (less than 1/4"), a sort-of-sparkly off-white, and made of what feels like pumice rock: somewhat gritty to the touch, like the feel of a nail file. Not that it feels in any way unsatisfactory; in fact, you may grow fond of it quickly, as we did. Our only fear is that the wheel's surface, which seems somewhat porous, might accumulate oily dirt (or dirty oil) from your fingers, becoming stained and ugly. Cleaning it might not be easy.

Right above the wheel is a button that allows you to step through the available destinations for wheel control: filter cutoff frequency, FM amount, osc 2 pitch, LFO1 level, and something called "morph," which is basically any parameter or group of parameters you choose to assign the mod wheel to. To the left of the pitch stick are two buttons for shifting the keyboard range up and down by an octave for each button push. Five LEDs directly above these buttons indicate the current octave setting. *Music & Computers* editor David Battino demonstrated a cool arpeggiator-like performance technique, playing a two- or three-note pattern while stabbing at the octave-shift buttons. Unfortunately, shifting octaves has no effect on note numbers transmitted via MIDI, but it does transpose the internal voices in response to incoming note data.

Not to be overlooked is the arrangement of the control panel. All controls lie within a



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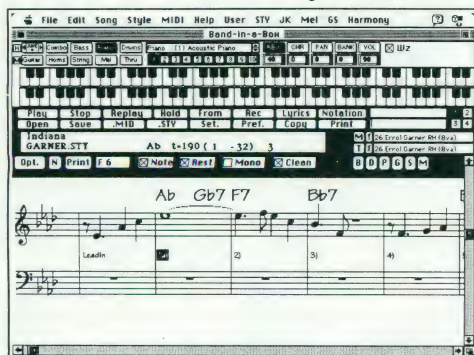
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*You can easily access the Nord Lead's knobs and buttons with your left hand. The controls are arranged in "modules": LFO, oscillator, filter, etc. We're absolutely infatuated with the pitch stick (the best pitch-bender we've ever seen), located just above and to the left of the wafer-thin mod wheel.*

rotated-L-shaped space (approximately 14" wide by 8" high) that bends around the left end of the keyboard — perfect for accessing the knobs and buttons with your left hand while you play with your right.

Controls are grouped by function in a manner reminiscent of our favorite vintage analog synth, the Minimoog. The filter knobs are most immediately accessible directly above the lower part of the keyboard. A splotch of the watermelon-pink on the mostly blue-gray panel identifies the cutoff frequency knob. To its right are the resonance and envelope amount knobs. Above these are the filter envelope's four knobs, labeled with the words that make up the familiar acronym: ADSR. In other words, you get knobs to set the filter's attack and decay rates, its sustain level for as long as you hold the key(s), and the release rate. The same complement of knobs appears directly above in the amplifier section of the control panel. A fifth knob in this quadrant gives you amplitude gain control; think of it as programmable volume, stored independently with each patch. You can also use it to set the level of each patch in a layer, or to adjust the level of each patch in a multi-channel multitimbral MIDI setup. Sensibly enough, this knob transmits and responds to MIDI controller 7, volume.

**The Sound Starts Here.** Both of the Nord Lead's two virtual oscillators can produce triangle,

sawtooth, and variable-width pulse waves. Oscillator 2 can also do noise, in which case its coarse tuning knob works as the noise "color" control. For tuning the pitched waveforms, this knob covers a range of  $\pm 60$  semitones, a full ten octaves. The knob is accompanied by an LED that lights whenever an octave transposition is reached. Cool. You get almost a full semitone up or down for the second oscillator's fine tuning control. The relative amplitudes of the two oscillators can be adjusted with the oscillator mix knob. At the full counterclockwise position, osc 2 is inaudible; likewise, at the extreme clockwise position, you won't hear osc 1. Another knob lets you manually adjust the pulse width of both oscillators together (obviously one or both have to be generating a pulse wave in order for adjustments to this knob to make any audible difference in the sound).

Several timbral-varying analog synthesis techniques are ready to go: hard sync, FM, and pulse-width modulation. With the push of a button, you can hard-sync osc 1 to osc 2. Varying the pitch of the latter is then somewhat like turning the filter's resonance and cutoff frequency up and down. Osc 2 (the "modulator") can perform single-operator frequency modulation on osc 1 (the "carrier"). There's also a knob for setting the modulation level. Brings back memories of doing the same on the Minimoog. (On the three-oscillator Mini, osc 3 serves as the LFO, but you can set it to audible frequency ranges like oscillators 1

and 2. Neither of the Nord Lead's two LFOs can oscillate that fast, but they do a bunch of other things that we'll get to in a moment.) A button in the Nord Lead's osc 2 section of the front panel allows you to enable or disable keyboard tracking for that oscillator, for hard-sync and FM applications, or for percussive and clangerous patches.

Three voice-assignment modes are provided: mono, legato, and poly. Obviously, the latter mode means you can play chords consisting of as many notes as there are voices available. Both of the first two modes convert the Nord Lead into a monophonic (as in one-note-at-a-time) instrument, like the Minimoog. Every note you play in mono mode will retrigger the filter and amplifier envelopes, regardless of whether you release all the other keys you might have played on the keyboard. In legato mode, the envelopes are only retriggered when you release all keys prior to playing a new note. This allows for more expressive playing, because you can control when the envelopes are retriggered by the way you play. By the way, both mono and legato modes give priority to the last note played.

One of our favorite synth effects from days gone by is polyphonic portamento, which old analog beasts such as the Oberheim OB-X could do so well. This is another of the exciting amenities offered by the Nord Lead. There's a knob for setting the rate of transition between notes. A button marked "auto" activates portamento between notes only if they're played legato (without releasing the previous notes). This works better in mono and legato modes, because all 12 voices have to be sounding before auto portamento functions in poly mode.

Four global modes are provided for assigning voices to the Nord Lead's stereo outputs. The first makes the output monaural — equal signal at both the left and right outputs — unless unison is activated. Unison doubles the number of voices in use, halves polyphony, and gives the sound a stereo spread. Mode 2 is always monaural, regardless of whether unison is engaged. In mode 3, stereo imaging is created by alternating between the left and right outputs with every note. In mode 4, patches assigned to banks A and C will play through the left output, and those assigned to banks B and D will be routed to the right output. With unison activated for either mode 3 or 4, the left/right separation isn't so distinct, because some notes appear to come from somewhere in the middle of the stereo spread.

We discovered an interesting anomaly while experimenting with the unison button in mode 1 in conjunction with the four bank buttons and a sequencer. When the sequencer triggers the patch assigned to bank 1, and this patch has unison activated, the unison effect disappears when you switch banks and the patch in the new bank doesn't have unison activated. However, if the new patch does have unison engaged, then the voice from bank 1 will continue to sound in stereo. By the way, you can tune the amount of pitch variation for unison mode from 1 to 9 — a range covering from almost equal pitch to about a quarter-step of detuning. This too is a global parameter, rather than being stored per patch. (Unison detuning is stored with each per-



formance on a PCMCIA card.)

Besides triangle and sawtooth, LFO 1 can generate a random waveform for sample-and-hold effects. A front-panel button lets you assign LFO1 to modulate the pitches of both oscillators, osc 2 alone, filter cutoff, or pulse width. Rate and level knobs fill out LFO1's complement of controls.

Other than providing its own rate knob, LFO2's controls are quite different than LFO1's. LFO2 can be assigned to modulate oscs 1 and 2 or the amplifier; in either case, the modulating waveform will be triangular. The other three LFO2 choices make it into an arpeggiator, which will play any notes you're holding on the keyboard (or sustaining with a footswitch) in one of three orders: up, down, or up and down. The arpeggiator-range knob turns continuously but actually only has five settings: off (the arpeggiator doesn't run) and one, two, three, or four octaves. At a setting of one, the arpeggiator only triggers the notes that you play. Select two, three, or four and the arpeggiator will repeat the notes you're playing one, two, or three octaves above original pitch. We're disappointed that the Nord Lead doesn't transmit all the arpeggiated notes, only those that you play on the keyboard.

Both LFOs (including LFO2 in arpeggiator mode) can be synchronized to MIDI clocks coming from an external source. However, when you set an LFO to sync mode, it doesn't work exactly the way you'd expect. Specifically, if you set the arpeggiator to receive external clocks, it will sync to incoming clocks as long as the external device transmits them; if the Nord Lead ceases receiving clocks because you've stopped the sequencer, drum machine, or whatever was transmitting those clocks, the arpeggiator will revert to its internal clock and continue to run. We're used to having MIDI devices that are slaved in such a way to stop running when they stop receiving clocks. The Nord Lead's type of operation isn't necessarily inappropriate, unless you really want the arpeggiator to stop when the master device does. You won't be able to sync a sequencer, drum machine, or other slave device to the Nord Lead's arpeggiator, because it doesn't transmit MIDI clocks.

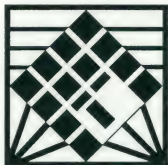
A simple attack/decay envelope is provided for modulating either FM amount or osc 2 pitch. Knobs are provided for setting the attack and decay rates, as well as the envelope level, which is a bipolar control. In other words, setting it to a counterclockwise position from 12 o'clock makes the envelope have a negative influence on the destination; clockwise from 12 o'clock, it has a positive effect.

**And It Goes Through Here.** The Nord Lead's filter can function in one of four different modes. It will work as one of two different types of lowpass filters, one with a 12dB-per-octave cutoff slope, such as those used in old ARP and Oberheim synths, and the other with a 24dB response, as on Moogs and the Prophet-5. It will also act as a 24dB highpass filter for those top-heavy sounds. Or it can work as a bandpass filter, cutting out the lows and highs from the signal. A dedicated button lets you step through the different filter modes, with three LEDs indicating the current mode. The resonance and

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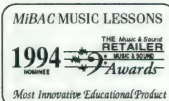
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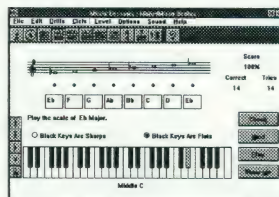
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## nord lead

sound quality of the Nord Lead's filter — or more correctly, filters, because there's one for each voice — are first-rate.

There are two additional buttons in the filter section. One enables keyboard tracking of the filter; the other routes velocity response to the cutoff frequency, so that the filter opens up more the harder you play. Velocity can also modulate any parameter tied to a front-panel knob, however you want to program it. You can assign it to as many destinations as you'd like, setting the minimum and maximum levels with each knob independently. If you'd like a parameter — say, filter cutoff — to respond inversely, you can do that by making the minimum level higher than the maximum level. Once you've programmed a knob to respond to velocity, you can vary the response range up and down by adjusting the knob itself; its current position will define the minimum level.

In addition, Clavia has provided some really cool functions for controlling the Nord Lead's sound via MIDI. For instance, you can assign a specific note on a given MIDI channel to re-trigger the filter and/or amplifier envelopes of a patch you're playing from the keyboard. Thus you can use a track of your sequencer to rhythmically alter the sound that you're playing in real time. In addition, you can control the Nord Lead's timbre via velocity data tied to incoming MIDI notes (or only one note) on a specific channel. We've never seen these capabilities on any other synth before. Although the Nord Lead

doesn't provide all the modulation routings found in synths such as the Oberheim OB-Mx or Marion Systems MSR-2 (see Keyboard Reports, Aug. '94 and Feb. '95, respectively), the ability to route velocity to any combination of parameters makes this new synth very expressive and responsive.

**No Pressure.** As powerful and expressive as its extensive velocity-response implementation is, the Nord Lead could benefit immensely from the addition of aftertouch. It neither transmits nor responds to this controller. You can play with the knobs as you sustain notes, but sometimes you may not have a free hand, and it's those occasions when aftertouch comes in very handy (pun intended).

Another surprise is the fact that there's only a single foot-controller input on the Nord Lead's back panel. You can assign the input to work with a sweep pedal or with either a normally open or closed footswitch; in the latter case it functions as a sustain pedal. Not only is it unfortunate that only one pedal can be used at a time, it's especially bad that a sweep pedal simply duplicates what the mod wheel does. There's no way to assign the pedal to do something else, such as control the Nord Lead's volume. Thankfully, the synth responds to sustain and volume data from an external MIDI source.

**Attention: You Might Learn Something From This.** Not to be overlooked is the educational aspect the Nord Lead offers. Just like the Mini-

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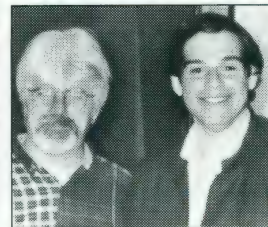
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moog and many other early analog synths, the Nord Lead's knob implementation and modular control-panel layout can help any synthesist learn the basics of sound.

**Competition.** Several synths come to mind as potential competition for the Nord Lead. Possibly the most evenly matched competitor is the Oberheim OB-Mx (see Keyboard Report, Aug. '94). This rack-mount module is covered with knobs and provides a much more extensive modulation implementation than the Nord Lead. The Oberheim costs quite a bit more, too; a fully expanded 12-voice OB-Mx lists for \$5,596 (\$3,499 for a six-voice model, plus three two-voice expansion cards at \$699 each). Given its modulation capabilities, the OB-Mx can produce a wider range of timbres than the Nord Lead, but we prefer the sound of the latter.

If Roland's JD-800 were still in production,

it would be a prime competitor to the Nord Lead. The JD-800, reviewed in July '91, carried a list price of \$2,895 and was the first synth introduced in some time that offered a front panel full of real-time sliders. It was capable of producing compelling and powerful sounds, covering a wider sonic range than the Nord Lead thanks to its 108 sampled waveforms and built-in effects. One thing in the Nord Lead's favor in this comparison is the fact its knobs transmit continuous controller data; movements of the JD-800's sliders resulted in the transmission of system-exclusive data, which is nowhere near as convenient in sequencer-based applications as easier-to-handle controller data.

Another synth we can't help but compare the Nord Lead to is the relatively inexpensive Novation Bass Station (\$649.95, reviewed in Feb. '95). The Bass Station, which isn't much smaller than the Nord Lead, has a two-octave

velocity-sensitive keyboard and real-time programmable knobs and buttons that transmit controller data when they're adjusted. As fun as the Bass Station is to play, it's monophonic and its sound quality is a long way from measuring up to that of the Nord Lead.

**Conclusions.** No two ways about it, the Nord Lead is a beautifully executed synth. It's all digital, but it sounds convincingly analog. Everyone who played it during our review process commented on how good it sounds. As always, we found a few items that could stand improvement — namely, lack of aftertouch response, constrictive footswitch/pedal implementation, and failure of the arpeggiator to transmit the notes it generates over MIDI. But even these oversights can't keep us from giving the Nord Lead top marks. If you're in the market for an analog-sounding synth, you *must* hear and play this instrument. ■

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BOB SAFIR

## Enhanced CD Format Heats Up

**A**lthough the Enhanced CD format is not exactly hot news fresh off the press, the activity and controversy surrounding it reached new levels at this year's Digital Hollywood Expo in Los Angeles. (For more on Digital Hollywood, see page 16.) The Enhanced CD format combines traditional audio information with interactive information such as text, graphics, and video. It can be played in a standard audio CD player as if it were an audio-only CD — but in your computer's CD-ROM drive it becomes a multimedia title, typically including song lyrics, liner notes, interviews with the artist, music videos, and photographs.

There already exists a certain amount of confusion over this new format, for several reasons. First and foremost, the name CD Plus has been used to generically describe this kind of disc, but that name has also been used by Sony/Phillips to identify the specific multisession disc that they are proposing as the new standard. So the term Enhanced CD came along to “clear things up” . . . but at last count there were at least some ten to 12 types of Enhanced CD format. Are you surprised? Remember, this is the computer industry's traditional contribution to the business part of the equation: numerous formats, incompatibilities, corporations vying for dominance and control — you get the picture.

The format has been around for a while in a version called “Track One,” in which the first track contains the computer (or Yellow Book) data while the rest of the CD contains the full-bandwidth audio (the Red Book material). While this scheme basically works, it means that a standard audio CD player must skip track one, because this track could conceivably send out a blast of white noise that could damage your speakers or (if you're listening through headphones) even injure your ears. In the real world, the corporate lawyers know that this won't happen, they simply don't want to be faced with lawsuits from those who claim it did. Because there is no “automated” way to skip track one, the format has given way to the dozen or so schemes that are currently on the table. The one proposed by Sony/Phillips is based upon Kodak's multisession format, in which the first session is devoted to audio, with subsequent sessions devoted to data, thereby making the data portion “invisible” to your audio CD player. Its only problem? It's not out yet.

That has left a hole in the market, which is

being filled by those ambitious enough to get an Enhanced CD product out today. These formats are sometimes referred to as “Track 0” because the data resides on the disk before the first track and is thus skipped by the audio CD player. However, there are already several formats competing for the spotlight: Active Audio, i-trax, Audio Vision, and so on. Other Enhanced CD formats include CD Extra, CD Option, IMCD (Interactive Music CD), Music ROM, and undoubtedly more by the time this goes to press. So if you're interested in producing an Enhanced CD, your first problem is to determine which format to produce it in.

The Audio Vision format is being advocated by Ardent Records in conjunction with Phillips Media. There are currently two titles available in this mixed mode format — one from 2 Minutes Hate and another from Techno-Squid Eats Parliament. The regular audio CD is able to display band biographies, music videos, liner notes, and photographs on a Macintosh computer, although PC versions are supposedly in the works. At a press luncheon at Digital Hollywood, the titles were previewed running on a Mac.

The first misconception that many people might have is that the audio portion of the multimedia program is identical to the Red Book audio on the CD. This is not the case. The audio

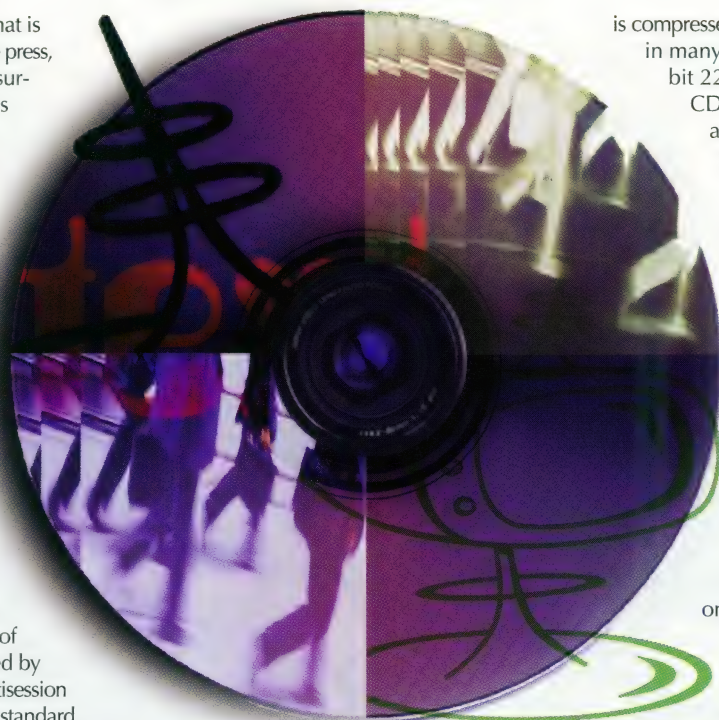
is compressed and down-sampled, just like that in many multimedia titles, typically to 8-bit 22kHz. A typical 50-minute audio CD might use up to 450Mb, leaving about 200Mb for the videos, text, graphics, and, yes, the same audio data compressed and squashed for playability on the CD-ROM. On certain titles this may ultimately be inconsequential, but for purists, this fact alone could be a deterrent to pressing an Enhanced CD. The Ardent titles played just fine on both the CD player and the Mac and did seem “enhanced” by the presence of the multimedia material.

One producer of this new format, Mark Waldrup of AIX Entertainment, is pushing his own i-trax format. Claiming to be the only format currently on the market that will play back on audio CD players, Macs, and MPCs, i-trax also boasts no elaborate setup routines, which sometimes require a few megabytes of hard disk space as well.

An upcoming title, *Rhythm of the Pridelands*, with music by Jimmy Cliff, was produced for Walt Disney Records. Like other i-trax titles, it should be priced similarly to a standard audio CD. This title is among some 14 titles currently in Waldrup's production queue, including a debut album from Civilization that I previewed on my CD player and multimedia PC, and attempted to check out on my Mac.

As Mark warned me, this new medium is not without a few problems. For some reason, it seems that NEC CD-ROM players have trouble identifying the data on the CD and will not play the enhanced material. But on the MPC, the disc sounded good, looked great, and played well. Minimum recommended hardware requirements are 25MHz, 030 Macintosh machines and 25MHz, 486 MPC machines. The title utilizes Quicktime and Quicktime For Windows for video playback.

One question I began to ask myself is, “Will anybody care about this stuff?” (Anybody, in this case, is the often-forgotten consumer who shells out the bucks for such products.) The interactive portions of the products that I saw at Digital Hollywood still had wait times as long as 30 seconds in some instances between mouse clicks and action. The videos, although artistically valid, were still 320 x 240 pixels in size and were occasionally marred by the audio “sputter,” which drops a second or so of audio





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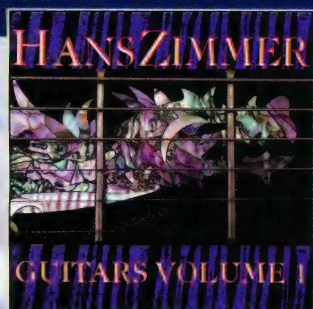
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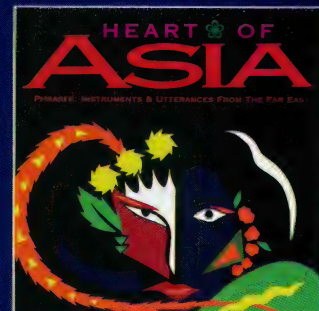
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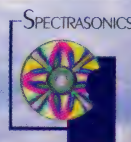
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while regaining sync. Overall, there were some cool things on the discs, but were they anything to get excited about?

Waldrup's viewpoint on this does bring things into perspective. He states that AIX is not marketing a separate multimedia CD, which would cost \$59.95, as an adjunct to the regular audio CD. The extras on the Enhanced CD come, in essence, for free. The disc has to be regarded as a music product first, with the multimedia aspects as frosting on the cake. If Waldrup and others keep the price point the same as for a regular audio CD, then he may have a point. I get nervous, though, when record companies start talking about adding "just a few dollars to the price — you know, because we're not making them in *huge quantities* yet." Isn't that what they said about audio CDs, which were supposed to come down in price once they were manufactured in significant quantities? How many millions make them "significant" quantities?

A promising aspect of the new format is that the technology, as always, is changing at tremendous speed. What may be somewhat amusing by today's standards could indeed be mind-blowing just months from now. I would personally like to see the audio CDs become capable of playing back with the quality of a typical music video with all its inherent bandwidth. A year from now it may be viable to play such a CD on an audio CD player, a computer's CD-ROM, or as a video disc hooked up to a television set.

Finally, there was an additional bonus on the Civilization Enhanced CD that I found useful. Under "Other AIX Titles," there was a sampler of five other discs, which provided a lot more than the usual 25- or 30-second audio clip. Some of the clips were full music videos that clocked in as long as 1'15" in length. This really gave a taste for the title and artist, which is sadly lacking in a lot of other samplers and multimedia magazines that purport to do the same thing. This might well serve as a model for them to follow.

So knowing all this, what does a potential producer in this new medium do while things sort themselves out? I asked Peter Wolf, who also had a booth at Digital Hollywood and produces product for his Spin Interactive label. "I can't wait while the industry tries to settle on standards," Peter said. "If you want to produce something now, there are plenty of ways to do it . . . take your pick."

Well, I pick to watch for a while — at least for a few months, to see what the Sony/Phillips/Microsoft clan is up to. I know that I can count on one thing with them: licensing fees. If you've got something to produce now, you might look into some of the above formats. They work, they're available now, and most of them come without additional licensing fees. ■

*Bob Safir is president of InterOctave, a San Jose/L.A. company specializing in original music and sound design for interactive multimedia, and a former multimedia product manager at Microsoft and product manager at E-mu Systems. He is the founder and co-chairman of the Interactive Audio SIG of the MIDI Manufacturers Association.*



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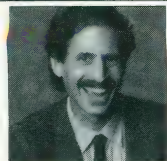
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I had a regular gig in a posh L.A. eatery playing piano in a jazz trio. The club owners were fun-loving, the food was succulent, and

the band members were my good buds. Even though it was among the least lucrative gigs in history, it was one of my favorites, and we

all worked to keep the gig fresh; we'd bring in new arrangements, have guest soloists, and over-tip the waitresses. ►

Ex. 1. "Ernie's On His Way," a barn-burning set-closer that's worked very well for me. Note the tempo and imagine a drummer playing brushes and a bassist walking underneath, sounding like the midnight freight at top speed at midnight. On my gig, the bassist followed my rhythm in bars 1, 2, 5, 6, 8, and 15, where the drummer threw in a nice fill on beat 1. If you really want to impress someone with your chops, put a Dm7-G7 turnaround in place of bars 31 and 32, then open it up for solos.

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1 Cmaj7 Am9 Gm9 Gb9#11 G/F Cm9 F9 B7b5 Bbmaj7 Gm9

6 Fm9 E9#11 F/Eb D13#9 Gm7 C13

11 Fm7 Bb13 Ebmaj7 Cm7 Dbm7 Gb7

16 Dm9 G13 Cmaj7 Am9 Gm9 Gb9#11 G/F Cm9 F9 B7b5



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◀ After a few weeks I felt the need for a break tune, that magic transition from music to Muzak that tells the regulars it's time to re-order and lets the band look oh, so cool. And since it was a special band, I wanted to write something new rather than recycle an old fave.

The successful break tunes I'd known had certain features. They were energetic, short, and epitomized the style of the band. Also they were pleasing enough to the ear and chops to be played four times a night. I started with a couple of '70s-ish, Brecker Brothers-type lines — very angular and 400 bpm — but they didn't really pop with just acoustic piano, bass, and drums. Then I did a couple of weird ones with strange time signatures and vertical sonorities that would have bugged Alban Berg. Wrong. Finally I wrote a nice, dense tune that I knew we would still enjoy playing after the ten thou-

sandth set (Example 1).

You'll notice that the harmonic colors in the first four bars lift the opening right out of a standard II-V category. The first two bars whip you through a tunnel of changes. You'd expect maybe a nice major seventh chord on the first beat of bar 3, but instead you get a thick and ambiguous polytonal chord that tells you "Don't relax. This ride ain't over!" Good advice, because you modulate down a whole step and roar through the pattern again. (For a masterful demonstration of really luscious progressions and voicings, check out Dave Brubeck's "Strange Meadowlark" on *Time Out* [Columbia]. You'll gasp.)

Another aspect of this tune that makes it enjoyable time after time is the contrary motion and voicing. See how that first *Cmaj7* uses just three notes within the range of a tenth? The next chord, the *Am9*, gets thicker, with five notes spreading out to cover an oc-

tave and a seventh. The texture keeps getting thicker and the bass and melody get farther apart until the seven-note *G/F*, which spans over two octaves and a sixth.

The B section (bars 9-16) is pure Cycle of Fifths done up in II-Vs. My bebopper friends light up when they hit this spot. Then the piece repeats and ends with a frantic coda. One performance note: Tear through the ending with great zeal. Try to be frenetic, even sloppy.

As a composer you'll be doing projects large and small, sublime and ridiculous. But all are wonderfully important and worthy of your most profound attention. ■

As a composer and songwriter, Richard Leiter has done projects for a wide variety of clients, NPR, Honda, Carl's Jr., ABC/TV, and Inglewood Wines among them. He writes and performs in California.

The musical score is written for piano and consists of three systems of music. Each system has a treble and bass staff. Chords are indicated above the staff, and melodic lines are written in the staff. The first system (bars 21-25) includes chords: Bbmaj7, Gm9, Fm9, E9#11, F/Eb, D13#9, and Gm7. The second system (bars 26-30) includes chords: C13, F, Eb9#11, D9, G7, and C13. The third system (bars 31-35) includes chords: Am7, D13, Gm9, C13, Fadd9, and 8va. The score ends with a double bar line.



◀ Continued from page 9

readers to Cochran's thoughts.

Ed Kosmahl  
via Internet

Applause to Connor Freff Cochran. It's gratifying to know that my subscription bucks can subsidize a forum for amateur quantum physicians rather than more of those silly and mundane articles on music. I guess I missed his cutting-edge observation, deep philosophical thought, and keen motivational insight. I just couldn't keep myself awake long enough to finish the whole thing.

Chuck Christianson  
via CompuServe

## Turtle Beach Quad Studio

Here are several observations about Turtle Beach's Quad Studio that were missing from your fine review [Mar. '95]. As of Feb. 1, the current version of Quad does not offer MIDI sync through an external port. In my studio I dedicate one PC to MIDI sequencing and publishing and a second PC to digital recording. This makes it necessary to have a 20' MIDI cable connecting the MIDI (slave) PC to the Quad/PC, porting the MTC signal through my card (1) external out. The software gives you the illusion that this is appropriately set up, but as the techs at TB tell me, this is a sync ability they are working on for the first upgrade. As your tests show, MIDI sync is only available now when running your sequencing and Quad software on the same PC.

There's no package information about two-card installation or discrete input! Your review briefly mentions that two Tahiti cards allow for discrete, four-channel out. My setup is card one left and right (stereo) and card two left and right (stereo), a nice upgrade when a user wants to spend another \$299 for a second card. Once installed, it's very easy to use and does allow more separation control. Unfortunately, the manual makes no mention of how to install the drivers to make two cards work. TB tech support did fax me two pages of instructions on how to proceed from a single card operation to the two, but it required Windows/sys.ini changes and more.

One nice Quad feature, especially in comparison to IQS's Saw, involves further multiple track division (4 to 8 tracks). Saw offers four stereo tracks for a total of eight not very discrete recording tracks (i.e., track 1 L + R, track 2 L + R, etc.). This would, by all accounts, offer more tracks per recording than Quad. Imagine my surprise when your review pointed out that Quad does indeed offer stereo recording on each of its four tracks as well. And, unless I missed something in the material I've studied, Saw runs on a single soundcard (i.e., Tahiti or Monterey) and does not offer four discrete audio in and out channels that two Tahitis do on the Quad product.

Except for the missing MIDI sync, Quad seems to match abilities with Saw in every respect other than archiving. Any serious project will require a minimum 1Gb hard drive, and managing file space will require removing old files when the final mix is completed. Quad sound files are still just a series of .WAV and program files, related by title, that are too big to drop onto floppies, so that SCSI drive or tape backup become the only means of archiving, unless you drop all separate track .WAVs to a DAT. (Good luck trying to resync each track if you ever have to reconstruct your multitrack recording!) Saw archives by dropping the sound files to DAT while program and archive information is dropped to a single 1.44 floppy. Not only does this make retrieval a lot easier, but for anyone with a DAT there is no other archiving equipment expense. Also, Saw drops this material to archive in real-time track playback time. A single three-minute song on four stereo .WAV files, plus related program files, is over 60Mb of material and will take significantly longer to archive on a tape backup system.

To get started with similar attributes, Saw is \$599 plus \$299 for a Tahiti card. Quad is \$499, including the Tahiti card. Perhaps Saw provides a few more screen options, but with Quad packing Wave SE in each box the two programs are pretty similar in most conventional terms.

Kurt Misar  
Musikus  
Portland, OR

## No New Look

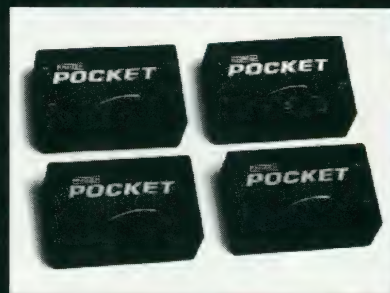
I love the articles, reviews, and interviews in *Keyboard*. Even the ads are interesting and informative. But I hate your new graphics design. The titles, lettering, and picture borders are all distracting, but the lead-ins to your feature articles in the Mar. '95 issue were especially annoying. A simple coherent image of Brian Eno is rejected in favor of an ugly, chopped-up mess. We get to read the beginning of the piece on Thomas Dolby in tiny letters across his ass amidst huge amounts of wasted space.

This type of design is the print equivalent of the look generated for television in recent years. The shaky, monkey-cam shots and white flash edits used on many commercials, promos, and videos are painful to the eye and insulting to the mind. They display contempt, as if the producers are afraid that the viewer might actually see something. In *Keyboard*, a similar sensibility all but obscures the first page of text in the article on RMI's vintage digital synths. At a minimum, graphic design should leave words legible. Hipness should be secondary.

Ted Curley  
Framingham, MA

Continued on page 133 ►

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# digital home recording

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## Two-Track Recording For Cheap

**D**AT (Digital Audio Tape) has transformed the project studio by offering CD-quality two-track mastering for relatively little money compared to a two-track reel-to-reel deck with noise reduction. Some people also use DAT for real-time concert recordings, or bounce between two DATs to build up multitrack compositions the way we used to with analog sound-on-sound techniques. But for those on a budget, the price of admission is still relatively steep: A portable DAT runs around \$600 to \$700, and a rack model with digital I/O starts at around \$1,500. To do bouncing, you need two DATs. For that kind of money, you could buy a digital multitrack and not have to bounce tracks — or at least, not have to bounce as often. On the other hand, you'd still need a DAT for the final stereo mixdown.

Even if you already have a DAT, a second DAT would appear to be almost a necessity. Digital data has this nasty habit of disappearing when you least expect it — whether we're talking a hard disk crash or a DAT dropout that ruins a great final mix. Pro studios have always had the capacity to make safety copies. Back in the analog days, a quality two-track recorder would be pressed into service (with the attendant generation loss). Nowadays, doing a digital-to-digital transfer from one DAT to another, or via an AES/EBU interface to an ADAT, DA-88, or hard disk recorder, lets you make multiple safety copies that are "clones" of the original tape. Unfortunately, these backup options are fairly expensive.

Had DAT become a best-selling consumer item, the prices would have been driven down via economies of scale to the point where DAT decks should have cost around \$300-\$500. Alas, that was not meant to be. But there is another rotating-head tape technology that did become a mass-market item, and holds the key to inexpensive mastering, bouncing, and backup.

**The Video Solution.** What would you think of a device that offers near-CD quality, easy indexing, lower tape costs than DAT (tapes are more readily available, too), and only costs around \$300 to \$400? That's exactly what a VHS HiFi deck offers — and of course, you can watch videos when you're not using the deck to record audio. VHS HiFi machines cost more than standard VCRs that simply record a mono analog track, but the added expense is worth it. To put things in perspective, a high-quality VHS HiFi deck costs a quarter to a half of what a typical DAT deck costs.

However, not just any VCR will do, and there are some drawbacks compared to DAT: no digital



I/O, no balanced line connections, and you're not using 16-bit encoding but usually some variant of PCM or FM recording. Nonetheless, although the sonic performance of VHS HiFi is generally a smidgen shy of DAT, it's ahead of anything else except the most costly analog decks.

**Case History.** Recently I needed to replace an aging VCR, and decided to get something that would work as a second "DAT" deck as well. I decided on a Mitsubishi HS-U500 because it had a number of useful audio features (as well as very sharp picture quality). No matter what deck you get, look for:

- **Metering.** Not all decks let you see the signal levels coming in and out of the tape, which is essential for recording purposes.
- **Indexing.** This makes it a lot easier to find individual tunes on a two-hour tape, although VHS decks usually won't let you put markers as close together as DAT (for example, the HS-U500 requires at least one minute between markers).
- **Ability to record audio without video.** I've heard reports that certain decks will record audio only if there's a video signal present. I haven't run into any of these myself, but just in case, make sure you can do this before you plunk down your plastic.

In addition, the HS-U500 has a few other nice features: You can play back either the right or left channel individually as well as both channels, there are two sets of jacks — front and rear panel — that you can switch between (a convenience feature that eliminates some patching hassles when you want to record from mul-

tiple sources), the wireless remote is real cool when you're sitting at a computer and want to tell the deck to do something, and a "PerfectTape" option analyzes your tape for a few seconds, after which it rates the quality and adjusts the internal circuitry to best match the tape (conceptually, but not technically, equivalent to adjusting the bias on analog tape). This is also a good way to see if a "bargain" tape is really a bargain or not.

**Did Someone Say "Free Lunch"?** As you might expect from a device with a video heritage, in addition to the limitations mentioned earlier, there are some additional sacrifices on the audio side compared to DAT. When using a jog/shuttle wheel, you don't get to hear the audio as you usually can with DAT. Also, many VCRs now require a TV or monitor to set up the device's parameters as you step through menu options and such. (Fortunately, these settings are often battery-backed, so once you get them set, you no longer need the video display.) Also, VHS transports are generally slower than DAT transports, so you need a bit more patience; and you have to do without functions like error indicators — although frankly, I think VHS HiFi may be a more robust medium than DAT.

However, considering the price differential, these limitations are minor irritations, not major flaws. A bigger problem is that most mastering houses are geared to take DAT or CD-R, but you can always bounce over to a borrowed or rented DAT when the time comes.

**A Word About Sound Quality.** Some purists will complain that recording a safety of a digital tape through the VHS HiFi deck's analog inputs represents a sonic compromise, and they're right. But the difference is minimal with a quality VHS HiFi deck — and in any event, a safety that sounds 95% as good as the original is far better than no safety at all. Certainly, people mix to DAT through the analog inputs and find it acceptable.

The bottom line: When you need quality two-track recording, there's more to life than DAT and reel-to-reel recorders. I've been very pleased with what a good VHS HiFi deck can do. Now if you'll excuse me, I want to do a quick safety of a mix, then watch *Jurassic Park* with the stereo audio patched into my studio monitors. . . . ■

*Craig Anderton is slowly but surely becoming an interactive cyberspace kinda dude. If you're an AOL subscriber, you can reach "Craig Anderton's Sound, Studio, and Stage" area via keyword SSS.*



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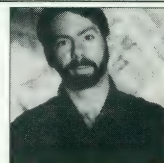
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## Two's Accompany

One of the many marvelous things a piano can do is accompany another instrument or a vocalist. With a good command of harmonic options and a mastery of sound and touch, you can express an almost orchestral palette of *sonic variety* with the instrument. I personally respect a pianist much more if they are able to accompany well and play a supportive yet creative role — in some respects, it demands much more musicianship than soloing. In addition, if you are

a good musical partner, you will probably work more and in more diverse situations, thereby getting more experience, and enrich your bank account in the process! But in order to accompany others effectively, your left hand needs to learn how to accompany your right.

Let's continue to work with our solo approach to the classic ballad, "Body and Soul." With a steady pulse, let's start by simply outlining the harmony in tenths and sevenths (see Example 1).

In order to set up for the next step, play the entire left hand part of Example 1 with your fifth finger alone. Then build chords using the top note as the lowest member of a chord group (Example 2).

In order to get some variety, let's use essentially the same notes but change their rhythmic groupings (Example 3). Now fill out the texture with sevenths, tenths (roll if necessary), and chords (Example 4). To get a bigger, more orchestral sound, try experimenting with pedal points in the left hand and

Ex. 1. "Body and Soul" with a bare outline of the harmony in the left hand. Play the left-hand part entirely with your fifth finger to prepare for Ex. 2.

Ex. 2. Extension City. That fifth finger just opened up a lush harmonic world to enrich your accompaniment textures.

Ex. 3. Mix up the rhythmic groupings for variety.

Ex. 4. Farther along the texture continuum, you can thicken things up on the downbeats as well.

"Body and Soul," words by Edward Heyman, Robert Sour, and Frank Eyton. Music by John Green. Copyright © 1930 Warner Bros. Inc. (Renewed) Rights for the extended renewal term in the United States controlled by Warner Bros. Inc., Herald Square Music, and Druopetal Music. Canadian rights controlled by Warner Bros. Inc. Extended term of Copyright deriving from Edward Heyman assigned and effective January 1, 1987 to Range Road Music Inc. and Quartet Music Inc. All Rights Reserved.



octave doublings in both hands (Example 5).

Another fun way to stretch your harmonic knowledge for accompaniment is to discard the melody and just play half-note chords. Play as melodically as possible, use harmonic substitutions, split the chords between your hands, and strive for smooth voice-leading (Example 6).

When you play through these examples and continue experimenting on your own, keep a

few things in mind. First, don't over-pedal, since that will turn your gorgeous harmonies to mud. Try pedaling on each quarter note, catching the chord right after you play it. Second, practice your left hand alone. Third, keep an ear on the balance between your hands — remember, your left hand is your accompanist and shouldn't overwhelm the volume of your right hand. Listening carefully to yourself is the first step in

listening better to others and accompanying them musically. ■

*Grammy-nominated jazz pianist and composer Fred Hersch can be heard together with Manhattan Transfer vocalist Janis Siegel in selections by Dietz and Schwartz, Sting, Stevie Wonder, Lennon and McCartney, and others on their new duo CD, Slow Hot Wind (Varèse Sarabande).*

Ex. 5. Octave doubling in the melody and pedal points are additional techniques for your accompaniment bag of tricks.



Ex. 6. Now run through the tune with chords only, keeping in mind the importance of good voice-leading and contrary motion between your hands. Throw in substitutions like the tritone substitution on beat one of the second bar.



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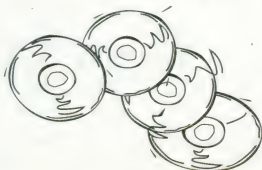
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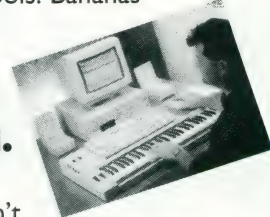
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◀ Continued from page 127

## Prog Wars

Okay, I'm going to give it to you straight. The rightful disappointment prog fans feel toward ELP's *In the Hot Seat* hasn't got diddly to do with "selling out." Just as irrelevant is the fact that a bunch of Top 40 dweebs think its "real songs" are less dinosaur than boring wanks like "Karn Evil 9" and "Tarkus." The album isn't really all that bad as pop albums go. But it isn't a progressive album.

For several years, I shopped at a record store whose owner supplied me with most of the prog albums I own. This didn't change the fact that he detested all of my "artsy-fartsy crap." He never failed to remind me that it was "pretentious" and its artists were "poseurs." The kindest thing he had to say about progressive rock was also the most accurate: that it wasn't "real rock 'n' roll."

So if, as my friend Bill said, that which isn't rock 'n' roll is not rock 'n' roll, then what makes the same sort of certainty about progressive so wrong? Even if a band's older albums are progressive, that doesn't necessarily mean the new one necessarily is. Progressive isn't the keyboards: The '80s King Crimson had no keys. If synthesizers were it, The Captain & Tennille were progressive! It isn't the song length: Blues metal bands like Mountain and Cream stretched out at great length in live settings. It isn't the multi-thematic intricacy: Classical does that without the visceral in-your-face attack that progressive gets from rock. It isn't the polyrhythmic intricacy: Prog inherited that from jazz. Progressive draws from all these influences but isn't part of any one of them. And it isn't a new studio version of *Pictures at an Exhibition*: People without CD players won't hear that. So *In the Hot Seat* is not progressive. Got that?

Richard Miller  
Albion, NY

## Corrections

I appreciate the mention you made of my CD, *Frequency Fusion Formula*, in Discoveries [Feb. '95], but there is a typo in the phone number, which should have read (011-61-8) 271-7397. Fortunately, the fax number was correct.

William A. Menz  
Adelaide, South Australia

## Bulletin Board

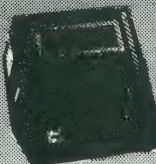
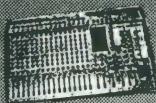
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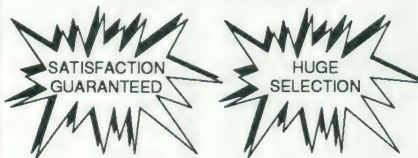
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Continued from page 152

with each passing minute the movement of the water grew, going from gentle to definite, definite to determined, determined to downright dramatic. Soon I was in the middle of major tidal action, with water sloshing up out of the tub on both sides, splashing the redwood deck.

Great truths can lurk in prosaic places. Here in this San Anselmo hot tub I was suddenly struck with the real skinny about leadership, the core secret, the vital revelation: To move the world as *you* wish, you must choose a goal, get in a rhythm, and then *never stop*. It's just as easy — and as difficult — as that.

And all three steps are crucial ones.

Leadership begins with determining a goal. The goal defines the game, focuses its direction, and provides a standard for the measurement of success. It also sets whatever inherent restrictions there may be on methodology and available resources. Pretend otherwise and you guarantee your failure as a leader, because you've guaranteed the failure of your effort. In determining your goal, therefore, you must satisfy the demands of two requirements: possibility and consistency.

Is your goal possible? If it has been done before, by anyone in roughly the same con-

dition or position as yourself, then the answer is almost certainly yes. If meeting your goal requires violating a well-established law of physics, the answer is almost certainly no. In between those two fuzzy boundaries lies a vast gray universe of judgment call. Much that is worthwhile may seem unlikely. But unlikely is not the same as impossible; it is just dependent on both situation and time. The genius of cutting-edge leadership lies in noticing, before others, that the "rules" might be subject to change. Mohandas Karamchand Gandhi foresaw an Indian subcontinent freed from British dominion while still a young lawyer in South Africa. Bill Gates knew that computers had a broader future than the world of corporate mainframes when he was 19. Vincent van Gogh knew from his beginning in art that paintings could be about the essence of a thing, not just what that thing reveals to the eye. None of these men could have told you specifics of how to realize their early visions, but no matter. They had them. That is how everything new begins.

The lesson of time is that more things are possible than we may know, before we actually try. Be bold and sharp, then, not cowardly or a fool, in selecting your goals.

Is your goal consistent? Does it spring from

your deepest-held beliefs, and can it be defended without leading you into contradiction? If not, it can never succeed, any more than a building raised on a rotten foundation will stand for very long. This cautionary theme is at the heart of a myriad of stories and fables. It is a major wellspring of tragic art. *Hamlet* is rife with it — it's easy to argue that Claudius, Gertrude, Polonius, Ophelia, Laertes, and the melancholy Dane himself all die by the play's end from pursuing actions at odds with their individual truths. Closer to our own home and time, those who oppose abortion will never win their point by advocating the death of abortionists, just as those who oppose murder will never rid the world of murderers by killing them. You cannot be what you combat and still succeed. St. Patrick is reputed to have driven the snakes from Ireland; it's a safe bet he didn't do it by unleashing a separate but equal plague of reptiles.

Once selected, a goal must be pursued. The test of leadership at this stage is to chart a course that moves toward the goal in question, instead of wandering hither and yon across the landscape. Human beings are pack animals. *En masse*, we trust our leaders in direct proportion to their own acceptance of their role. Ronald Reagan was coated in

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Teflon not by luck, but by his own calm public certainty. Agree or disagree with him as you will, his goals were clear. Bill Clinton, by contrast, has no easy gift for clearly (and simply) cleaving to an outlined goal, and has suffered accordingly. A leader may change policies and personnel at little risk when pursuing a well-stated goal, even one that many people disagree with. But if the goal flickers or wavers or shifts, if the human pack starts to think its designated *alpha* is unsteady, forget it. Get offstage fast or face the hook.

This sidestep into politics reveals another interesting facet of the second stage of leadership, which is that all leadership must contend with resistance. (This is one reason my Boston rallying cry wasn't really leadership, any more than lighting a firecracker would be creating an explosion. Those people were primed to eat. I triggered them, that's all. Maybe it would have been leading to convince them all to try Nigerian cooking instead of the Japanese food their mouths were set for; but not the way things played out.) To lead is to establish a new direction, not just surf a trend, and whenever you go in a new direction you will encounter resistance. Sometimes that resistance will be active, even well-armed. Sometimes it will be nothing more than the passive inertia of our material and emotional worlds.

Whichever, you must be ready to take advantage of it. Just as point A (where you are) and point B (where you want to be) define your possible paths, the resistance you face along the way defines your required *rhythm*. Do you take bold, irregular action, dancing and dodging up the field of endeavor like a Heisman candidate? Or do you move snail-slow yet steady as the picosecond-tick of an atomic clock? If resistance is absent, any goal can be achieved using any beat at all. In the real world, you've got to find the one that works and see it through.

Which brings us inevitably to crucial part three of leadership: not stopping.

It is really no surprise that there are more pretenders and wannabes than true leaders. Real leadership is a major test of endurance. Gandhi's dream took 54 years to become real. Van Gogh altered the visual arts forever, but posthumously; while alive he only sold one painting. And though Bill Gates is wealthy enough to have recently spent \$30 million for a rare Da Vinci manuscript, the jury is still out on whether his vision of the future of computing will prevail. He's young. There is plenty of time ahead in which to falter and fail. Bigger companies than Microsoft have passed into their graves and obscurity; there are no guarantees.

Not that a true leader ever asks for them. . . .

As an artist, you are something of a leader by natural inclination. You seek to add new riches to life. To that extent you are trying to push the world into matching itself to your ideas, and not the other way *around*. *You* are also human, and therefore, like it or not, fall somewhere in the pack. (I do not say this to limit you. You do have limits — we all do — but it is safe to assume that you are probably far from them.) So ask yourself these questions, and act accordingly: How much of a leader are you? How big is your dream? How many people will it take to accomplish it? How much will the world have to change to fit you in? How much are you willing to sacrifice along the way?

Goal, rhythm, the refusal to give in. All of these ask the true leader to surrender to something bigger, to place cause before ego instead of ego before cause. Leadership is about being the foundation of an effort, not the effort's point. It's about running just ahead of your team, not waiting for them to carry you. (An amazing number of "leaders," including nearly all politicians, are really followers in rhetorical disguise.) Leadership is a kind of crown. Wear it without shouldering responsibility and the things you build will crumble. ■



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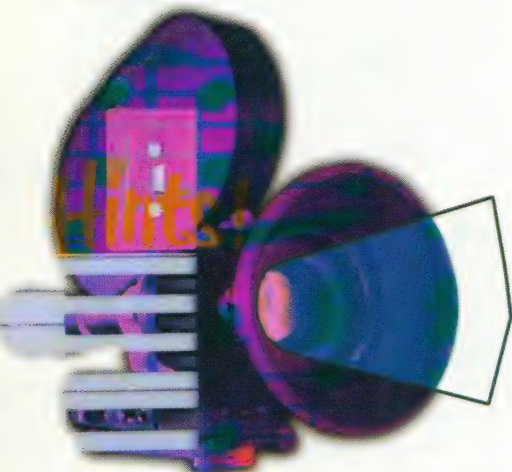
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**A** while back, I put a letter in my column from a young composer asking me what he might do to further his career in composing music for films. I also included a few ideas in response. Since then, I've gotten several similar letters, and even an occasional demo tape. I'm not too comfortable in the role of a Media Ann Landers, to tell you the truth. Who am I to say how someone gets the break that starts a career? I feel like my career is just beginning as well. I work hard and I've had some good (and a few not-so-good) breaks along the way. Still, there are a few trends among the letters and tapes I've gotten that compel me to offer a few additional pointers about getting involved in the film and TV music biz — the Reel World. May I share them with you? Thank you so much. . . .

- In general, the people in the entertainment business are a very conservative and cautious group. If your music completely bends the established genre of film music to the point of breaking, if your music falls outside of the styles set by any known composer or successful film score, then you may have a problem. Neither Stravinsky nor Bob Dylan was a successful film composer.

I studied contemporary classical composition in music school. It was a great, though academic, education that taught me a lot about writing music. It did not teach me about composing for the screen. It wasn't designed to. I loved film scores, and started buying recordings while a student. That was my first real lesson in scoring. The next was to eventually meet some of the people who were actually scoring films, first through some music classes, and later as a working musician.

Today, some schools teach music specifically from the scoring point of view. I think that's great, but it does lead to another potential problem:

- Don't rip off a score to make a demo. I've heard a few of these. I'm not talking about imitating the style of an established film composer

— there's nothing wrong with that. I mean emulating an actual piece of music from a film score too closely. In general, you can't fool anyone but yourself, somebody along the way will figure it out. The point here is that you may stand a better chance of finding work if your music has some elements of the sound or style of a currently successful film composer, but not if all you do is recreate some tune from a film. Where's the creativity in that?

You probably have heard the saying, "Good artists borrow, great artists steal." It's true to a point. Every artistic style develops slowly over time. Each important new artist within a field or genre builds on top of what came before (*i.e.*, does not start from scratch). There are some exceptions, but I think this rule applies well to the movies (or television, or interactive media). The great composers who have succeeded in the reel world have done so by adding a unique voice to an existing form, while also embracing the basics created by those who came before them.

Learn from the current crop of successful composers: Find scores that really move you and figure out what it is about the music that works, both for you emotionally and in terms of how it supports the picture (since the picture is still king).

- Even in film scores, one of the most important and most often overlooked factors is a great melody. Sure, some of the best moments in film score history are from dense or atmospheric passages that are not especially melodic. But virtually every successful composer has at some point in their career written a memorable theme. Don't neglect that. People bond with melodies — it is how most people hear music. It's also the most elusive part of composing for film.

- When you put together a demo, be sure that there is some music on it that exactly fits what the producer/director is looking for. Most non-musicians have very little musical imagination, and find it hard to understand what you are capable of beyond simply what you give them on tape. If you get the chance to submit a demo for a car commercial, be sure that at least one piece on your tape sounds like a car commercial. What does a car commercial sound like? *Ask them before you submit the tape.* There is nothing wrong with asking those kinds of questions ahead of time, and it might just show that you are concerned and on the ball. Then either find something of yours or write something that fits their description. Same goes for any project you have a shot at.

- Remember, it's the work that counts. If you are looking for professional work, don't supply superfluous information about yourself. And in this category I must include (here come those letters) your educational background. As arguable as it may be, no one in the professional entertainment business will care a nickel if you grad-

uated with honors, got a prestigious academic award, slept with your teachers, starred in the school play, or scored the school play. They won't care about any facets of your life other than those that resemble the job being offered. Period. Recent history bears me out that you have a far better chance of breaking into the scoring biz if you are a former member of a famous rock band than if you have a degree in music. How you learned how to compose is of no one's concern other than yours and whoever paid for your lessons. If you are asked to submit something along with a tape, it will be a list of credits, and that's it.

Why are credits so important? Because there is a huge difference between knowing how to compose music and being able to deliver the right music for the project on time, under budget, properly recorded and mixed, with great-sounding musicians, with all legal and payroll affairs properly handled, with the right attitude when changes are requested (for the fifth time), and in the proper tape format. Credits say to a new client, "I know how to do it right, and I've already succeeded at it before." It boils down to trust. Can you be trusted with their very precious project, and money? Good question. A diploma does not answer it. Acting like a professional does. As they say, nothing succeeds like success.

- I've said this before: Never submit a tape of which you are anything less than proud. There are no excuses, and no one will know what you are capable of beyond what they actually hear. You will always be competing against people with more experience and more gear than you, so make the best of what you have. There are no points given for complexity — only imagination, expressiveness, appropriateness, and a good-sounding recording.

- Finally, and in contradiction to what I said above, be yourself. You have a better shot at something if you are the only right person for that job. If you can provide a musical element that sets you aside from the rest of the pack, then you will have a much better possibility. Don't be bland! Ry Cooder scores films because he does something that no one else can. He is unique. So are you, and it is your job to prove it. Tread that fine line that distinguishes you, while maintaining the "screen sense" that is part of the existing genre of good film music. It's not easy, but as Tom Hanks said in *A League of Their Own*, "Hell, if it was easy, then everybody'd do it!" ■

*Jeff Rona is a composer and synthesist in Los Angeles. He was chairman of the MIDI Manufacturers Association for five years, and coordinates the UCLA Extension Electronic Music Program. In his spare time he has scored the music for Homicide, Chicago Hope, and other TV shows and films.*





## Who Wants To Be Normal?

**B**ack in the 1930s, when life was simpler, Aaron Copland wrote a marvelous little book called *What to Listen For in Music*. His mission was to educate non-musician audiences to a few of the finer points of classical music. (He probably had a hidden agenda, too — to show people who hated “that awful modern music” that what he and Stravinsky and Bartók were doing was very similar in most ways to, and grew directly out of, the 19th Century tradition that concert audiences were comfortable with. But that’s another story.)

Copland begins by explaining that music consists of four elements: melody, harmony, rhythm, and tone color. Obviously true — and yet, in the end, too simple to fully embrace the essence of music. We’ll be closer to the truth if we include *context* among the fundamental elements.

Context is everything. It’s everything because it defines the meaning of everything else, at every level.

At the microscopic level, Copland obviously understood that a melody note doesn’t exist in isolation. The notes that are heard before and after it create a context. Shorn of context, the single note has no meaning. You might as well blow your nose.

Harmony supplies a vertical context for melody. Copland also pointed out how orchestration (tone color) can reinforce melody, harmony, and rhythm to create a unified emotional impact. The orchestration creates a context within which the melody is heard, and vice-versa. If the melody, harmony, and rhythm aren’t present, there isn’t any orchestration, because nothing is audible. And vice-versa.

While he tips his hat occasionally in the direction of jazz, he was writing in an era when one could still work entirely within the constraints of a given style — in his case, serious concert music — in an unself-conscious way. Postmodernism has changed all that. Collage artistry, sampling, media saturation, and ironic distancing, among other forces, have conspired to awaken us to the fact that Copland’s serious concert music, played straight and taken seriously by the performers and listeners, is a *context*. Only one of many that are possible.

Sample a symphony and throw it into a

hip-hop mix, and you have exactly the same melody, harmony, rhythm, and tone color as before . . . yet the meaning has been drastically altered. Why? Because those four elements are heard in a different context.

Music theorists could argue, reductively,



that it’s the shift in tone color and rhythm when the symphony sample enters the hip-hop track that generates the new meaning. But there’s more to it than that. The symphonic sonority carries with it a rich set of cultural associations. These associations existed for Copland, but as a background, as a given. They’re brought into the foreground by the postmodern artistic techniques (*i.e.*, the new cultural context). When the symphony sample is cued up, a native of New Guinea — if you can still find one who doesn’t own a Walkman — would hear the same changes in melody, harmony, rhythm, and tone color that we do. The native might, theoretically, even be educated in the theory of triadic harmony, in which case he or she would grasp the harmonic implications of the sample just as a Juilliard graduate would. But this un-Westernized New Guinean would miss the

cultural baggage. Cultural associations are part and parcel of the context.

What makes this way of looking at music both fun and useful for the composer is the realization that each context also carries with it its own particular set of norms. These

norms are understood — intuitively or explicitly — by both listeners and musicians. A banjo, for instance, is normal in Dixieland. It is *not* normal in bebop, even though Dixieland and bebop are both considered jazz. In contemporary pop music, to take another example, the verse-chorus structure is very much the norm.

Here’s the voodoo about context: Change the context, and you automatically download a new menu of norms.

Too rigid adherence to norms results in sterility. This is the essence of the complaint that is often (and not without justification) levelled at radio playlists. Everything on a radio playlist adheres very closely to some set of norms, be they the norms of country music or of alternative rock.

Timid players and composers, and those who are still learning their craft, can be so petrified by norms that their creativity is stunted. Their imagination never has a chance to flower, because they’re hypnotized by a long list of thou-shalt-nots.

But we shouldn’t jump to the conclusion that bold, confident musicians violate norms with reckless abandon. On the contrary. Norms are necessary, if every piece of music is not to dissolve into a chaotic jumble of unrelated fragments. What creative musicians do is treat norms lightly, playfully. They work within them, most often, but violate certain norms when they feel that the violation would add to the expressive effect.

Once you understand that the norms of the context within which you’re working are simply another creative element that you can play with, like melody and harmony, you’ll probably discover new ways to work with your material. The dance of creativity lies in dodging back and forth between fulfilling the listener’s expectations *vis á vis* the norms of your style, and violating those expectations in ways that are perhaps implicit in the norms, and thus capable of carrying fresh meaning. ➤



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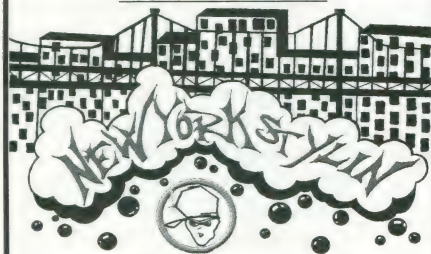
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◀ We can rate norms from hard to soft. A hard norm is one that cannot be violated without disturbing the listener, destroying the context, or both. A soft norm has more wiggle room in it.

To return to pop music, the three-to-four-minute song is the norm. Longer songs sometimes make it onto the radio, however, so we can say that the maximum song length of four minutes is a soft norm.

But when was the last time you heard a successful pop song that lasted less than a minute? The minimum song length is a good example of a hard norm. Violate it, and your listeners will most likely feel cheated. You can violate the norm of maximum song length, on the other hand, by writing a six-minute song — if you can convince your listeners that the extra length expresses greater-than-normal intensity, and if they buy your contention that the payoff (in intensity) is worth the cost (in listening time).

In other words, you can gain expressive power by violating a soft norm. If you violate a hard norm, you're a revolutionary, and you'll have to hire the hall yourself, or swap casses with your scruffy revolutionary friends.

The evolution of music consists not merely of new discoveries in harmony, rhythm, and tone color but of shifts in the norms. When the norms shift radically enough, you have a whole new context. Dixieland becomes swing. Swing becomes bebop.

To bop musicians, Dixieland was definitely "old hat." It took years before trad jazz players could convince the hep cats that the norms of Dixieland were still valid, that they could coexist side by side with swing and bebop. Now the styles exist side by side.

Is "context" the same as "style"? Not exactly. Context also includes things like venue. You can play in exactly the same musical style (melody, harmony, rhythm, and tone color) in a club or on a record, but some of the hard norms of recording are much softer in a club. You can take longer solos, dispense with the layers of synth pads, hump the mic stand, whatever. Different context, different norms.

Violating a norm will wake your listeners up. But as with the boy who cried "wolf," when composers violate the same norm a thousand times, the violation loses its impact. The norm will soften, perhaps disappear altogether. The former "violation" may solidify as a new norm, or merely gain neutral status as another option for the player or composer. To wake listeners up, stronger shock tactics are then needed, so hard norms can eventually become softer and soft ones disappear. This was what happened to the tonal system of harmony in classical music toward the end of the 19th Century. The norms softened until they became Silly Putty: In atonal music —

assuming you don't graft on a new and artificial "norm," as in strict 12-tone writing — anything goes.

Here's an added wrinkle: When you violate a norm, you're doing something other than what's expected musically. But your new harmony, tone color, or whatever may still be heard with reference to the previous norm, which is now *implied* rather than stated outright. This is what jazz harmony is about. The norm of extended tonal harmony that was developed in Dixieland and swing still exists, but it seldom appears overtly in the notes themselves. Instead, the notes in modern jazz dance around the edges of a harmonic context that is seldom explicitly stated. If you're hip — that is, if you're a knowledgeable listener — you'll hear the older harmonic context in the silent spaces between the notes.

Jazz harmony exists only with reference to this context, which means it isn't readily accounted for by Copland's analysis of music as consisting of four elements. To understand jazz harmony — or jazz rhythm, for that matter — you have to be able to hear a context that is never stated.

That's why players who are new to jazz don't swing. Either they state the context too explicitly (that is, they sound square) or they flounder around incoherently, like a speaker who knows all the words in the dictionary but can't construct sentences. Absent the context, the notes *F-B-E* are not triadic harmony, they're some sort of Phrygian fourth-chord. It's the jazz context that transforms them into a perfectly obvious *G13* chord (or a *D♭7♯9* chord, which is its jazz equivalent).

Copland talks about implied harmonies in his book, and about the evolution of tonality. What you won't necessarily get from the book is a clear picture of how to apply his observations to hip-hop, or new age, or speed metal. Musicians who play those styles are operating in a different context. But their contexts, like his, have norms. If you take a close look at the norms of your context, and think about which of them are hard norms and which are soft, or could be softened up, your musical palette is bound to get bigger. You may find some wiggle room where nobody ever noticed it before — and we all know how important wiggling is in popular music.

Who knows? If other musicians follow in your footsteps, you might even end up developing a whole new can of norms. ■

*Jim Aikin has been violating norms daily since his sophomore year in high school, when he stopped saying the "Pledge of Allegiance" and refused to dive under his desk during H-bomb drills. "Crispy sheep," he was heard to mutter, "are still sheep, and they're still crispy."*





It's funny, the reactions I get when from Discoveries candidates when I call. Christopher Billias interrupted himself in mid-sentence to confess, "This is strange." JD Rapp's reaction was something closer to the kid outside the candy store: "Am I really gonna get in?" Often their comments reflect the contrasts in their musical experiences. Rapp self-deprecatingly describes himself as a "complete amateur," while Billias sent me a three-page résumé that enumerates his experiences as a session player, sideman in cover bands, degree recipient at the New England Conservatory, music teacher, composer, producer, arranger, and even engineer. "My composition teacher at NEC pushed me into rock," he notes, "in order to branch out and expand my activities."

And he has, with a vengeance. His most recent projects include arranging, producing, and playing keys with the Leah Langefeld Project. This trio, augmented by bass and drums, is one of the most distinctive and energetic bands I've heard in a very long time. While Langefeld drives the sound, her scintillating vocals forcefully interacting with Lynda Stephens's alto sax, Billias shoulders the rest of the musical load. The compositions and arrangements are compact, crisp, and direct. Billias adds no more than what is necessary to highlight solos and melodies, yet the sound is full and rich. "Playing in cover bands taught me a lot about tastefulness, using a little line only where needed and not overdoing it."

Billias is also deeply involved in a books-on-tape endeavor. "It's like radio theater," he explains. "We're doing *Dracula*. The actors are just great; I didn't know that reading could be done that well. All the music is original, and there's plenty of room to stretch out. I used some familiar tricks, touchstones to get a certain feeling. And my production background crossed over into this project perfectly."

The contrast could not be sharper between Billias and Rapp, who has only one tape out now, *The Dark Room*, and another one, *Robberbarons*, due by the end of the year. So what? *The Dark Room* bristles with inspired tracks. The first side imaginatively blends processed vocals, storytelling in the tradition of Stan Ridgway, and open-ended rock cuts that allow for surprising bridges and solos. On some of his titles, especially "Serious Toys" and "The District," Rapp's jazz background seeps into the mix, offering a rock/jazz meeting that's completely unlike fusion yet bears a charming retro resemblance to some '70s funk-influenced discs. On the second side of the tape, which is all instrumental, jazz licks

pop up in several new-agey contexts.

This jazz element has a lot to do with Rapp's co-conspirator in music and life, Joyce Rapp. "She dared me," JD says. "Even though I was kind of a jazz hotshot, she challenged me to write a good pop song. I'll admit it was harder than I thought it would be. I have a lot more respect for good pop composers than I did before; in fact, I was really humbled. Now I hear a lot more when I listen [to a pop record]."

Though *The Dark Room* was a husband-and-wife project, *Robberbarons* will involve more people. "I wasn't satisfied with the drum sounds on the first one, even though I had a drummer help with them," Rapp admits. "I can't even listen to them now. So I'll be using a real drummer on the next one, and maybe a bassist."

Unlike Billias, who works full-time in various musical capacities, Rapp squeezes his MIDI time around his schedule as an economist. (It's a near-debilitating disease. Believe me, I know.) But he is hammering out a deal for cassette distribution in the eastern and central regions of the U.S., which could help him loosen the day-job straitjacket and concentrate on what he really loves. "Whatever you can do to make more music is good," he declares. Who would disagree?

## Honorable Mentions

**Name:** Jeremy Wagstaff. **Style:** Postmodern pop. **Contact:** Box 2318, Wisma Antara, 6th Floor, Jalan Merdeka Selatan 17, Jakarta, Indonesia. jwagstaff@igc.apc.org.

Wagstaff assimilates the sometimes floating, sometimes driving drums of Indonesian music with catchy techno-pop synth hooks and winding post-minimalist patterns. His 1994 cassette *Standing in the Sun* includes moments where the energy flags as well as some fine tunes that pull it all together.

**Name:** Lauri Allen. **Style:** R&B, hip-hop, dance. **Contact:** Thousand Oaks Village, #209, 1000 Oaks Dr., Atlantic Highlands, NJ 07716. Straight-up, deep-groove slow jams and rockin' techno. Well-crafted and sincere. With a bit of seasoning and equipment, Allen will run with the big dogs.

**Name:** Contagion. **Style:** Thrashy techno. **Contact:** World Domination, 33375 Cahuenga Blvd. W., #450, Los Angeles, CA 90068. Rambunctious, driving dance beats coalesce with guitars, throbbing keyboards, and gravelly vocals on the band's CD single "Turn of the Screw." As the first line says, "I guess now you're awake." Awake and *dancin'*, thank you. ■



**Name:** JD Rapp. **Age:** 34. **Influences:** Herbie Hancock, Oscar Peterson, Dave Brubeck, Duke Ellington, Prince. **Main Instruments:** Roland S-770 & JV-880, Korg 01/Wd & M3R, Ensoniq SQ-R & DP/4, Yamaha TG55, E-mu ESI-32. **Contact:** Dark Room Music, 586 King Ave., Marion, OH 43302. (614) 383-6304.

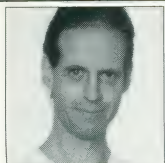


**Name:** Christopher Billias. **Style:** Urban contemporary, "anything else you need." **Age:** 37. **Influences:** Frank Zappa, Stevie Wonder, Jan Hammer, Keith Emerson, Beatles, Bach, Beethoven, Charlie Banacos, various '80s bands. **Main Instruments:** Roland JP-6, D-50, & S-550, Kawai K-1, Korg P3, Ensoniq SQ-R, Alesis HR-16, Macintosh Classic w/ Mark of the Unicorn Performer 4.2. **Contact:** 267 Nahant Rd., Nahant, MA 00908. (617) 581-0082, (617) 889-4319.

Titus Levi, founder of the California Outside Music Association, spends his free time struggling through graduate economics courses at U.C. Irvine. If you'd like to appear in Discoveries, send a cassette or a CD of your best material, a letter indicating your full name, age, style, influences, performance credits, goals, and equipment, a publishable phone/fax number and address at which readers may contact you, and a clear black-and-white photo of yourself with your keyboard setup. Photos should be labelled with your name and the photographer's name and address. All styles of music will be considered. Due to number of submissions, material cannot be returned, and applicants will not be contacted unless accepted. Send all correspondence to Titus Levi, 5153 Hanbury St., Long Beach, CA 90808. Titus also invites Discoveries alumni to keep in touch with news about career advances.



# inside the music



DAVE STEWART

## McGroggan — The Cerebral Option

**A**n old colleague and I were recently discussing the merits of simple over complex music, and guess what? We decided we liked both kinds. In our early days of composing, we had both written music which was pretty much as complex as we could make it, and were then outraged when very few people liked it. . . . Later, as maturity (or senility, call it what you will) set in, we began to appreciate the power of a simpler approach, and were now able to compose in either style.

This may seem a perverse development — after all, one is supposed to start off simply and then get more complex, not the other way round — but it struck me that it could have its advantages. If you learn a lot about music and then apply yourself to writing something simple, you have more chance of producing something beautiful, through informed choice, than a person who is forced to stay simple through a lack of musical knowledge. This theory will not convince everyone — some people believe, for example, that music is created by feelings, not through knowledge, while others will reject out of hand any music they consider insufficiently complex. (I know about the latter because one or two of them send me angry letters.) If these ideas work for you, that's fine; I am increasingly disinclined to argue about what is usually just a question of musical taste. But my own feeling is that it is impossible to know too much about music — it's an infinite system, with infinite possibilities

— and that the more musical knowledge you can acquire, the more expressive your music is likely to be. This, it seems to me, applies equally to all musical forms, from the simplest pop song to the most fiendishly intricate six-part microtonal fugue.

Returning to the relative merits of simple versus complex music, the non-amnesiac section of the readership will recall that last month, amidst the usual flurry of weak jokes and incoherent anecdotes, a germ of a musical idea was presented. [*Ed. Note: Three cheers.*] And here, by a simple but effective typographical trick, it is again (see Example 1). This is certainly a simple musical idea; a largely pentatonic (i.e., based on the five steps of the scale shown in Example 2) Irish folk song melody, whose Gaelic words I will not attempt to reproduce for fear of inadvertently adding to Anglo-Irish tensions. The title, as far as I could make out, is "McGroggan." It was my job to arrange this song for possible inclusion in the soundtrack of a TV drama series set in Northern Ireland.

Had the year been 1976, when I was at the peak of my complex, cerebral period, I would probably have sat down at the piano and arranged the piece as shown in Example 3. This approach has at its heart a desire to introduce a large amount of harmonic material, and offset the limited, folksy nature of the melody by changing key (albeit temporarily) wherever possible. This is by no means the most extreme application of these methods; one could, for example, treat bars

3 and 4 as shown in Example 4. However, the contrast between complex chord movements and simple tune would then, in my opinion, start to become too great. The music you see in Example 3 works well as a solo piano arrangement, the plain, transparent sound of the piano allowing the harmony to shine through. But would a vocal work over this? And would the same music sound so good played on synths, whose thicker, more sustaining sounds often favour simple voicings? Next month I'll show you my alternative synth arrangement of "McGroggan," simpler in harmony but richer in texture, and you can decide which of the two approaches you prefer. Alternatively, you can stare incomprehendingly at the mass of notation, make a low groaning sound of revulsion, and turn hastily to the computer ads for a bit of light relief. Whatever your choice, I appreciate you following my line of thought down to this, the END OF THE ARTICLE. It is my fervent hope that you will not be prevented by earthquake, personal bankruptcy, wildcat strikes by postal workers, insanity, or other misfortune, from rejoining me in next month's "Inside the Music," the column which likes to think about music a lot while murmuring "hmmmm . . ." and scratching its chin. ■

*This is number 48 in Dave Stewart's current "Inside the Music" series. Please send cakes with four candles, or queries about Dave's current work, to: Broken Records, P.O. Box 4416, London SW19 8XR, England.*

Ex. 1. A simple Irish folk melody, the basis for "McGroggan."





Ex. 2. The pentatonic scale.



Ex. 3. "McGroggan" — the cerebral arrangement.

Slowly and meditatively

A multi-measure piano piece in 2/4 time. The score is divided into three systems. The first system (measures 1-4) begins with a treble clef and a key signature of one flat. Measure 1 has a first ending bracket. Measure 3 contains a fermata. A double bar line with repeat dots follows. The second system (measures 5-9) continues the piece with complex harmonic textures. The third system (measures 10-14) includes a change to 4/4 time in measure 10, a key signature change to two flats in measure 11, and a final melodic flourish in measure 14 marked with a fermata and a 'Sev.' (seventh) indication. The piece concludes with a 'Ped.' (pedal) marking and a decorative asterisk.

Ex. 4. A more complex harmonic treatment of bars 3 and 4 from Ex. 3.

A short musical excerpt in piano style, showing a more complex harmonic treatment of the third and fourth measures of Ex. 3. It features dense chordal textures in both staves, with the word 'etc.' written below the second measure.



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**Q** *I'm having a problem loading Northstar's Grand Gold Pianos into my E-mu ESI-32 sampler. Since it's compatible with E-mu's EIIIx, why can't it load certain banks? Help!*

Tim Johnson  
New Orleans, LA

**A** According to Northstar's Scott James Hybl, "A fully loaded ESI-32 has as much waveform memory as the equivalent EIIIx, but will have about 8% less space in its preset memory." E-mu's Sean Wilhelmsen explains, "The ESI-32 and EIIIx have different code — the ESI having more screens, thus limiting its preset memory by a small amount. Except for banks created on the EIIIx using the maximum amount of preset memory [*Grand Gold Pianos* being one of them], the ESI has no problem loading EIIIx banks."

And therein lies the problem. "Northstar usually fills up its banks with both sample and preset memory," says Hybl. "We generally build our 8Mb banks on our Phase series, for example, so that the lowest common denominator (the EIII) can read the bank. Since we designed *Grand Gold Pianos* for the EIIIx, the preset memory used for those banks was at or near the limit. When you try to load one of these banks, the ESI locks up because it doesn't have enough preset memory to load the bank, even though the samples can be

loaded. You can still load individual presets until you run out of memory, but not the bank."

The solution: Call Northstar (13716 S.E. Ramona, Portland, OR 97236, [503] 760-7777). If you have an older version of *Grand Gold Pianos* that will not load complete banks into your ESI, they will replace your older CD-ROM free of charge. Says Hybl of the revision, "We have decided to 'link' certain presets rather than delete the extra programming. This linking procedure can save valuable preset memory."

**Q** *I've been composing music on my computer for about two and a half years. I think that my songs might be good enough to be published, but I have no idea about what I am supposed to do now. By the way, when I mention that I am 13, will that affect anything?*

Leo Der-Stepanians  
Glendale, CA

**A** Our best advice is to start out as songwriting superstar Diane Warren did: Sign up for a local songwriter's showcase. It's a great way to get your music heard and critiqued by industry heavyweights. It's also a great way to meet people in the business. Two organizations in the Southern California area are: Los Angeles Songwriter's Showcase (LASS), Box 93759, Los Angeles, CA 90093,

(213) 467-7823, and Taxi, 21450 Burbank Bl., Ste. 307, Woodland Hills, CA 91367, (800) 458-2111. To learn more about how the publishing industry works, refer back to our special issue on songwriting (Nov. 1994). In particular, check out "Survival Skills for Songwriters," starting on page 63, which addresses such topics as what publishers do, how to start your own publishing company, and getting paid. There's also a resource guide for further reading. A couple you might want to add to your list are *All You Need to Know About the Music Business* (Donald S. Passman, Prentice Hall Press) and *The Craft and Business of Songwriting* (John Braheny, Writer's Digest Books). As for your age . . . well, Diane Warren started when she was 14. Go for it! ■

*If you have a question about your favorite (or perhaps least favorite) hardware or software component or recording artist, or if you have a tip to pass along, write it down and send it to: Keyboard Questions/Tips, 411 Borel Ave., Ste. 100, San Mateo, CA 94402. As for the questions, we'll answer as many as possible, but due to the flood of mail received, we can only provide personal responses to a very small percentage of inquiries. With technical questions about specific items of equipment or software, please consult your owner's manual first, then write or phone the manufacturer.*

## buzzword!

*Life in the hi-tech fast lane is often as frustrating as it is exciting. Trying to keep pace with technologies, techniques, and terminology can be overwhelming. Often we get calls and letters from readers asking us to define some of the buzzwords and acronyms that they're stumbling over. So here are a few oft-mentioned offenders for all interested readers to download.*

**AES/EBU** = Audio Engineering Society/European Broadcasting Union. A digital audio interface developed mainly for pro-level products (DATs, hard disk recording systems, and the like) that uses an XLR connector.

**DAC** = Digital-to-analog converter. A device that changes the sample words put out by a digital audio device into analog fluctuations in voltage that can be sent to a mixer or amplifier. All digital synthesizers, samplers, and effects devices have DACs at their outputs to create analog audio signals.

**DIY** = Do it yourself.

**DSP** = Digital signal processing. Broadly speaking, all changes in sound that are produced within a digital audio device, other than changes caused by simple cutting and pasting of sections of a waveform, are created through DSP. A digital reverb is a typical DSP device.

**SCSI** = Small Computer Systems Interface — pronounced "scuzzy." A high-speed, high-volume communications protocol that allows computers, samplers, hard disks, and CD-ROM drives to communicate with one another.

**S/PDIF** = Sony/Phillips Digital Interface. A digital audio interface developed mainly for consumer-level products that uses an RCA connector.

**wall wart** = An external AC power adapter with the plug prongs located on the transformer.





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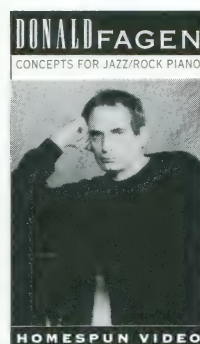
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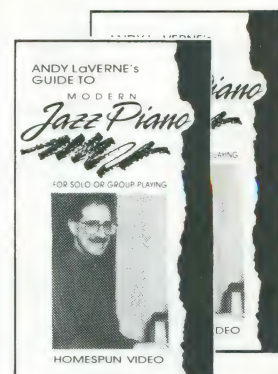
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## Connections 1: Oh Captain, My Captain



For a long time I thought the following story summarized all there really was to know about leadership.

The hotel lobby was jammed with the attendees of three separate conventions, plus such tourists as were foolhardy enough to come to Boston in early February. This is why it took me a while to realize that everyone in our Japanese restaurant group had gathered. The fact that there were 17 of us instead of the intimate four or five that had originally been planned did *not* help. Our group was like a soluble molecule trying to crystallize inside a Jacuzzi. As some of our number would arrive and connect, others would momentarily become dislodged to join different conversations, or go to the bathroom, or leave in search of something they needed from their hotel suites, or whatever. First we were three, then nine, then five, then 14, then down to six again, then . . . well, you get the picture. As designated Maker Of Reservations, I had been dubious about the mounting numbers of this expedition from the beginning. Now, as designated Watcher Of Clock, I was beginning to despair. Dawn would rise ere my stomach saw sushi.

Finally there came a point when all 17 of us, in smaller clumps, were within hailing distance of one another. I noticed this before anyone else did. Rather than try to round up each individual clump, sheepdog-like, and run the risk of getting distracted or losing a straggler, I opted instead for forceful action.

Putting my hand in the air like an Old West wagonmaster, I turned on my heel, shouted "Japanese food, ho!" in a commanding voice, and strode firmly toward the lobby's revolving doors. It was a moment of shining clarity and extraordinary hunger. It didn't matter if anyone heard me or not. It didn't matter if anyone followed. To heck with that. I was going to the door. I was going out into the Boston dark. I was going to walk nine freezing blocks to the restaurant. I was going to eat, dammit: Yakitori and miso soup and eggplant

tempura and yosenabe and tako sushi and salmon roll and green tea ice cream and lightly vinegared rice.

As I reached the doorway, my ethical sense re-asserted itself. Rather than pushing on through without a thought, I stopped and turned to see if anyone might actually

is not really about leadership at all. It's about *following*.

Leadership is something else entirely.

Here's another story, set a decade after the first. Not a freezing Massachusetts winter this time, but a balmy California summer, and no crowd, either — just me by myself



be following. One or two, perhaps? Maybe half a dozen?

Wrong. More than 50 people were headed my way. Unknown to me there had been four entirely separate Japanese restaurant groups gathering in the lobby that evening, and I had galvanized them all.

Eventually we sorted the mess out. Each group headed on to its respective target restaurant and — for the 17 of us, at least — the evening's meal was a great success. During much of it, however, I was distracted by the memory of that wall of approaching winter coats and hungry smiles. All those people moved from stasis to action by nothing more than three loud words and ten firm strides? Was this really all it took to lead? The underlying concept seemed almost painfully simple, but somehow I'd never noticed it before. Put plainly: It is easy to move the world in a direction the world already wants to go.

And I was right about that. The principle is sound. It is ridiculously easy to tip the world (or a portion of it) off the edge of whatever cliff it happens to be leaning over. This gets demonstrated every hour of every day, from Congress to the Casbah.

Only I was wrong to think it has anything to do with leadership. It doesn't. The truth is that my Japanese restaurant story

in a steaming hot tub (ah, Marin County; Lord love it). The sun was setting. I had spent all day helping a friend move from one precariously balanced hillside home to another, and now it was time to bake out the strains and pains. Floating well-nigh motionless in the hot water, letting my thoughts drift, I had about as much inclination toward action as Ayers Rock. Yet something of the day's energy and habit was still with me, because from the ankles down my feet refused to stop. Half-hearted, weak, utterly futile, they pumped in a steady alternating rhythm, as if walking on nonexistent steps.

About ten minutes into the soak, I drifted out of my reverie long enough to notice that the water in the tub was tilting gently from side to side. Not a lot, but too much to be my imagination. Interesting. . . .

I continued to pump gently with my feet. It seemed an insignificant enough action, yet

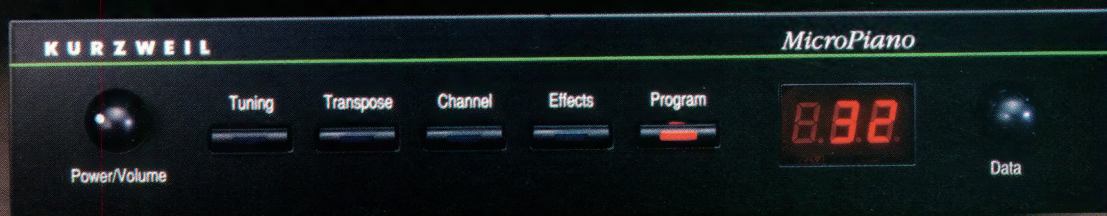
Continued on page 134 ►

Connor Freff Cochran is happily busy with a new partnership and new projects, including forays into that strange place called Hollywood. If you are interested in more of his explorations into creativity and life, just write c/o Crossing Point, 47 Lafayette Circle, Suite 180, Lafayette, CA 94549, and ask for a free copy of Connor's Creation newsletter.



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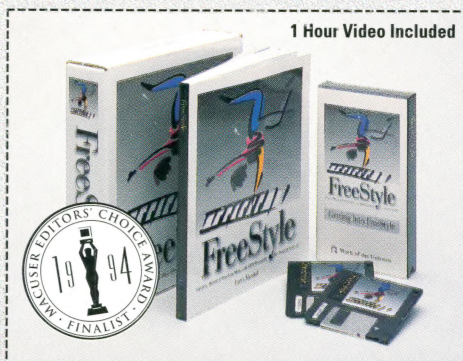
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